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ABSTRACT

This report documents the implementation and evaluation of a one-week competency-based workshop on designing learning systems for coordinators and curriculum development specialists of the West Virginia Department of Education, Division of Instructional Learning Systems. The main objectives of the workshop were: (1) the development of an innovative learning system model; (2) the training of staff to become state-wide change agents toward model implementation; and (3) the subsequent performance of instructional behaviors demonstrated by the workshop learders. The material is presented in the following format: (1) introduction; (2) planning phase; (3) participant characteristics; (4) workshop evaluation; (5) conclusions; (6) recommendations; (7) references; (8) appendices (workshop instructional materials, data collection instruments). Recommendations drawn from the experience were that: (1) the elements of the systems model developed in the workshop should be used by the curriculum leaders as a diffusion strategy; (2) follow-up data on participants' on-the-job behaviors regarding model implementation should be gathered; (3) the use of the competency-based workshops should be considered seriously by other state department of education bureaus and divisions adopting innovations for their staff; and (4) the use of full- or small-group followup sessions for staff members requesting or requiring aid in the implementation of the learning systems model should be considered by the Director of the Division of Instructional Learning Systems. (MJB)

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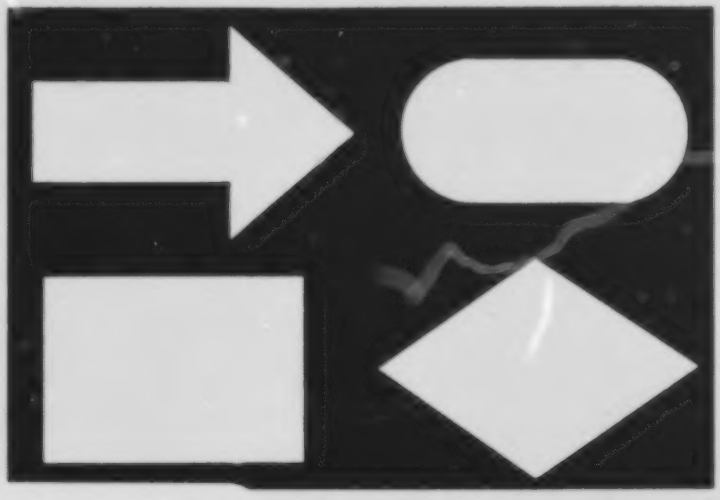

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FOREWORD

Educators are being asked to approach their professional responsibilities with a degree of quality never required before during the history of professional education. Consequently, a major leadership role of the West Virginia Board of Education and the West Virginia Department of Education is that of an advocate, espousing, urging, and speaking out for educational improvement and needed change in the areas of inservice education and continuing education.

The purpose of A Competency-Based Workshop on Designing Learning Systems for the West Virginia Department of Education, Division of Instructional Learning Systems Staff is to provide an example which generates substantive evidence for implementing and evaluating inservice workshops.

I believe this publication will stimulate thinking and provide insight pertaining to the design, development, implementation, and evaluation of inservice workshops and continuing education programs.

Daniel B. Taylor
State Superintendent of Schools

PREFACE

The Bureau of Learning Systems believes that a major portion of its responsibility is stimulating and assisting educational communities in establishing and maintaining a learning system. This mission translated into a goal statement necessitates the provision of programs for the development of knowledge, skills, and attitudes necessary for educational personnel to support the attainment of the Educational Goals For West Virginia.

The demand for quality in teaching indicates that generalities and platitudes of the past be replaced by precise description. This means inservice workshops, inservice education, and continuing education ventures must provide specific verifiable change instead of mere talk of progress. Therefore, inservice workshops, inservice education, and continuing education programs must be designed to meet the identified needs of professional educators rather than workshops and programs that are externally prescribed.

Consequently, the instructional behaviors, programs, and materials developed for inservice education and continuing education programs must be systematic, stimulating, psychologically sound, organized, and planned with instructional materials and media to meet the needs of the participant.

A Competency-Based Workshop on Designing Learning Systems for the West Virginia Department of Education, Division of Instructional Learning Systems Staff exemplifies the problem-solving process using a systems approach. The document serves as a model for designing, developing, implementing, and evaluating inservice workshops and continuing education programs.

The Bureau of Learning Systems and the Division of Instructional Learning Systems are committed, philosophically and psychologically, to learner-based decision-making. Although the entire staff of the Division of Instructional Learning Systems was the focus of this inservice program, personnel were involved on an individualized and personalized basis.

The Bureau of Learning Systems wishes to extend acknowledgements to the authors of this document and a special note of gratitude to the personnel of the Division of Instructional Learning Systems for their involvement in this project. In addition, thanks is extended to Merrill L. Meehan for his efforts in designing the cover of this document.

Phil E. Suiter
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INTRODUCTION

State departments of education have undergone considerable role changes since their inception. At first, state departments of education focused on regulation; i.e., the making of rules, maintenance of records germane to those rules, and enforcement of the regulations when appropriate. The second stage in the development of the role of state departments of education was that of providing much needed services to local school systems. Currently, while the regulatory and service functions have become operational, the focus is on the leadership role. For example, West Virginia's Superintendent of Schools says "The role of the State Department of Education has become that of an advocate, espousing, urging, and speaking out for educational improvement and needed change" (Taylor, 1975, p. 8).

One of the major state department of education leadership functions is to stimulate activities dealing with innovative educational practices. Presumably, such activities will result in educational projects, usually in the form of models, that are transferable or generalizable to school systems within the State. Assuming that such innovative models are reliable and valid, then interested parties might consider their adoption or adaption for their own use.

In the West Virginia Department of Education, the Bureau of Learning Systems is organized into three divisions. Using the team management approach, the divisions are responsible for the implementation of the three broad goals of the Bureau. Among the planned activities projected to achieve these goals, each of the divisions of the Bureau, during the 1975-76 school

year, implemented a leadership role and a new organizational structure. Accordingly, a Bureau position paper developed internally indicates that: "Staff should conduct appropriate staff development sessions dealing with the new leadership role" (Bureau of Learning Systems, n.d.).

The purpose of this report is to document the implementation and evaluation of a one-week competency-based workshop held in January, 1976, on designing learning systems for the coordinators and curriculum development specialists of the Division of Instructional Learning Systems. The main thrusts of the workshop were the development of an innovative learning system model, training the staff to become statewide change agents towards its implementation and subsequently perform the instructional behaviors demonstrated by the co-leaders.

RELATED LITERATURE

The literature review foci were educational innovations and the concept of change orientation.

Several schema for classifying educational innovations have been proposed; they are usually differentiated on the basis of the theoretical framework assumed by the classifier. Innovations have been classified most often by their intended outcomes. Following this framework, then, typical outcomes focused on: (1) the curriculum, (2) instructional practices, (3) educational technology, and (4) educational administration. However, the possibility of interaction among these classifications exists and does occur often in practice.

Not all educators agree that innovations in their fields can be classified. Hull and Wells (1972) attempted to classify innovations in their

field of education and develop a guide for evaluating innovations thus classified. They found that "A taxonomy of innovations was deemed not possible with the present level of knowledge and technology. Innovations were difficult to define" (p. x).

The Educational Programs for Innovative Curriculum (EPIC) developed an evaluation model for organizational structures affecting educational programs. The three dimensional structure included the following variables: behavioral characteristics, instructional characteristics, and institutional characteristics (PDK National Study Committee on Evaluation, 1971). Each of the three variables contained levels which then formed cells for classifying educational programs.

Although innovations are popular topics of conversation and many are vogue at any given time, numerous problems arise when educators attempt to implement innovative programs. There are, however, some generalizations which aid in the adoption of educational innovations.

The context in which an innovation is developed plays a large role in any future adoption or adaption. Some innovations may work well in one context but fail miserably in another. The community, political, professional, and economic contexts are some of the important variables in the implementation of an innovation. Variations between these variables may be more important than objective information about the outcomes of a particular innovation under consideration. Miles (1964) states that:

> Education innovations are almost never installed on their merits. Characteristics of the local system, of the innovating person or group, and of other relevant groups often outweigh the impact of what the innovation is. (p. 635)

The professional and economic contexts may be the most often cited constraints inhibiting the adoption of an innovation. The first requirement

of any proposed change is that its goals and objectives are clearly understood by all the professionals involved in its execution. However, differences in values, attitudes, and perceptions are bound to exist. In school settings, administrators are most often the decision-maker concerning the adoption of new programs but the "implementors" are most often the teachers; in their hands rests the ultimate success (or failure) of an innovation. Also, any innovation requiring additional resources, either money or time and energy which equals money, is bound to be adopted slower than expense-free innovations. Hull and Wells' (1972) research found that administrators possessed an "almost unique concern" (p. 41) for the innovation's costs and sources of financial support when compared to all other involved groups.

Rogers' (1962) diffusion research is the benchmark study for the use of adopter group labels. He devised the following labels to identify the various adopter categories within a population: innovators, early adopters, early majority, late majority, and laggards. These adopter groups fit the normal curve as far as relative time of adoption is concerned (p. 162). It is interesting to note that only 2.5 percent of a population fit into the innovator group.

Numerous change agent guides have been developed to assist innovators in the adoption process. Havelock (1970) prepared a guide reflecting his definition of innovation as a process. This guide emphasized the change process areas of: relationship, diagnosis, acquisition, choosing, acceptance, and self-renewal. Bushnell (1972) formulated a six-step change process including: diagnosis, objectives, constraints, potential solutions, evaluation, and implementation. Other change process guides with similar categories have been proposed.

The potential adopter of an innovation needs to consider its implementation in terms of changes it demands of individuals. Lippitt (1968) focused on the individual's internal resistance to experimental programs. His study revealed innovators need to understand factors within themselves before they can seriously commit themselves to change to new ways of doing things. Lippitt feels that "Usually dissemination agents do an inadequate job of helping the potential adopter explore realistically the question: "Well, how would this fit in my situation?'" (p. 42).

The attitudes of individuals representing the existing system become the locus of attention for the change agent. The importance of attitudes in a person's behavior is a major consideration. The necessity for determining individual attitudes and understanding their relationships to behavior was emphasized by Holloran (1967). He feels that "If we know something about an individual's ...attitudes... it helps to make sense and give meaning to individual behavior and, in all probability, it is the best basis for prediction yet devised" (p. 28).

Russell's (1972) research concluded that teachers' attitudes toward educational change is reliably measurable. Using the Change Orientation Instrument especially developed for his study, Russell found that "Early adopters, as a group, have significantly higher <u>total</u> change orientation scores than the laggard group" (emphasis in the original, p. 48). Using the same Change Orientation Instrument, Adamsky (1973) found "that the correlation between the teachers' orientation to change and their adoption behavior [of using behavioral objectives] was positive and statistically significant" (p. 101).

Hodgkinson (1974) sought to discover if there was a relationship between an individual's values and his orientation to change and, if so, which values

were they? He found six values which correlated significantly with change orientation. "The individual values equality, true friendship, wisdom, imaginative, and logical were ranked higher for innovator/early adopters and the value inner harmony ranked higher (lower numerical rank) for the laggards" (p. 54).

Rogers and Shoemaker (1971) identified the five most important characteristics of innovations which explain much of their adoption rates:

1. Relative advantage is the degree to which an innovation is perceived as better than the idea it superseded.

2. Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and the needs of the receivers.

3. Complexity is the degree to which an innovation is perceived as difficult to understand and use.

4. Trialability is the degree to which an innovation may be experimented with on a limited basis.

5. Observability is the degree to which the results of an innovation are visible to others. (pp. 22-23)

WORKSHOP PLANNING PHASE

In early December, 1975, the workshop co-leaders met with the Directors of the Division of Instructional Learning Systems and the Division of Professional Development Systems to formulate the learning system model, establish the workshop goals, and plan the general instructional strategy.

An underlying assumption of the workshop planners was that an innovation--such as the learning system model--is an idea or practice perceived as new by an individual; it matters little if the idea or practice is objectively new. This notion guided the workshop planners in the development of the learning system model and the workshop instructional strategy.

The learning system model developed by the workshop planning group was an expansion of the basic "input-processes-output with a feedback loop" model from systems analysis. The planners adapted the instructional model presented by Kibler, Gegala, Barker, and Miles (1974). Additionally, some concepts and terminology presented in Learning System Design by Davis, Alexander, and Yelon (1974) were adapted into the learning system model.

Figure 1 illustrates the learning system model developed for the workshop. The learning system model consists of the following seven elements: rationale, objectives, preassessment, instruction, self-evaluation, evaluation, and feedback. At two points in the model, the learner decides to take one of two alternative courses of action. This model was conceived as an innovative practice for the Division of Instructional Learning Systems staff to learn and utilize in their primary job function. Also, it was thought by the workshop planners that a spin-off from the model was that its general systems approach would be applicable to the staff's other divisional responsibilities such as projected activities, budget, conference, committee, and communication functions.

Six broad workshop participant goals were formulated by the planning group. First, the workshop aimed at having each participant accept learning system design as a viable educational practice. Closely allied with this was the second goal of having each participant recognize and/or match his/her instructional values with the characteristics of competency-based education. The third goal was to have each participant share his/her expertise and assist colleagues in achieving the workshop objectives. The fourth workshop goal required each participant to write instructional objectives reflecting the domains and their levels of behavior. Fifth, the workshop sought to have each participant analyze the elements of the learning system model as

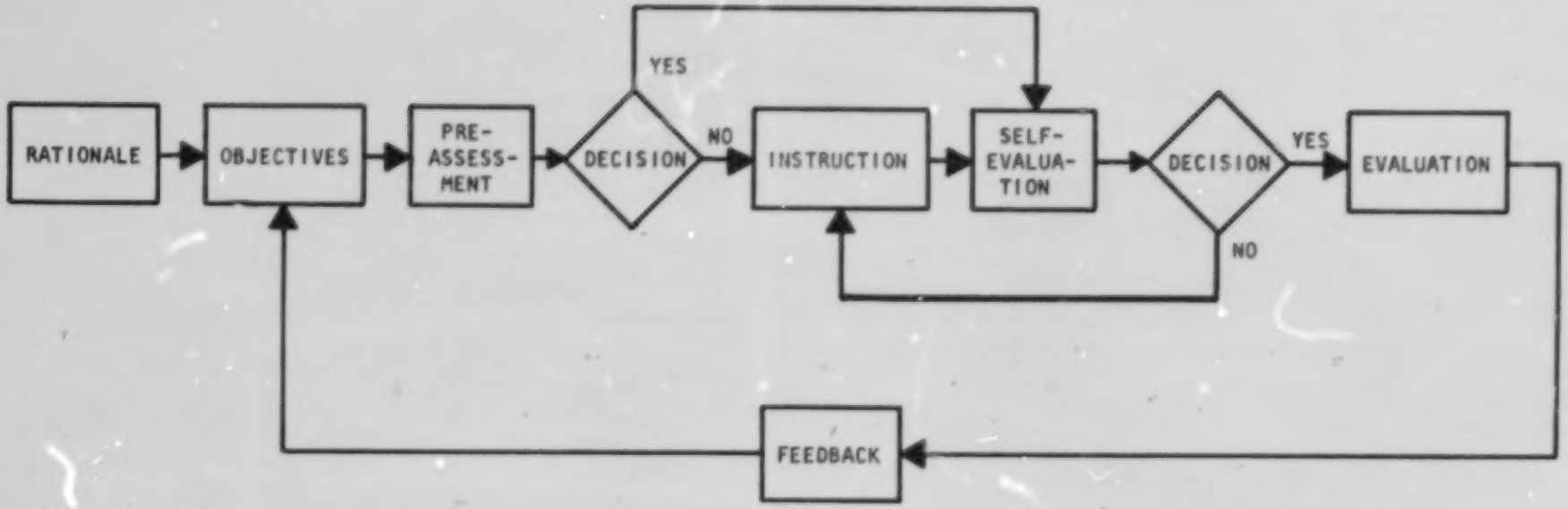


Figure 1 The Learning System Model

presented in the workshop. Last, each workshop participant was required to design an original example learning system appropriate to his/her divisional responsibilities. These six goals stated as terminal objectives and their related enabling objectives are appended to this report as Exhibit A.

The successful implementation of the innovative learning system model required the instructional strategy of conducting the workshop (process) to reflect the learning system design (product) that the participants in turn develop. Both workshop co-leaders had utilized this approach successfully in previous workshops and institutes. Details of this instructional strategy have been explained by Hobar and Priester (1974) and Meehan (1976). Basically, the emphasis is on the individual workshop participant to perform required competencies rather than merely possess knowledge about them. Hobar and Priester (1974) explain the instructional strategy thus:

> In actual application, workshop participants are encouraged at the outset to establish openly their beliefs about instruction and learning and to formulate their objectives for the workshop. Next, the workshop participants are given the terminal and enabling objectives for the workshop--this composite of participant and consultants objectives establishes the learning 'targets' to be mastered in the workshop. Following informal and formal preassessments, the workshop participants advance at their own learning rate toward mastery of the objectives within the time limitations of the given workshop.
>
> Under these circumstances, the workshop participants' aptitude criterion timelines (time needed to learn) are facilitated by an array of personalized learning alternatives and stimuli, individualized and small group conferences, peer appraisals, negotiation of criteria, self-evaluation, and formative and summative evaluation. (p. 3)

WORKSHOP PARTICIPANTS

The 19 workshop participants included the full staff of the Division of Instructional Learning Systems less the Director and his Assistant. Three

participants were coordinators for specific levels of schooling, one participant was the coordinator for school accreditation in the state and the other 15 participants were curriculum development specialists for particular subject disciplines such as language arts, health education, music, or industrial arts education. Data on the participants' sex, age category, educational level, number of years of teaching experience, number of years of administrative experience, and the level of schooling most identified with were elicited on a Personal Data Questionnaire (PDQ) administered during the workshop.

The workshop participants included ten males and nine females. Their ages ranged from the 26-30 category to the 61-65 category; ten of the participants were between the ages of 36 and 45, five were between the ages of 26 and 35, and four were between 46 and 65. The master's degree was the highest educational level attained by two participants, the master's degree plus additional credits was the level of 16 participants, and one participant had an earned doctor's degree. The mean number of years of teaching experience for the group was 11.53 with a range of 3 to 28 years. The mean number of years of supervisory or administrative experience was 8.44 with a range of one-half to 22 years. Five of the participants identified or dealt most with the elementary level, nine participants identified with the secondary level, and five of the participants dealt with the elementary and secondary education levels combined.

The Assistant to the Director of the Division aided in the implementation of the workshop by serving as an omsbudsman between the workshop co-leaders and the participants. He also performed the services of: assisting in discussions; conducting individual conferences; relating to certain participants; providing formative evaluation feedback; providing clarification of

divisional responsibilities; and scheduling audio-visual equipment, conference space, and typists.

WORKSHOP EVALUATION

The posture assumed by the workshop planners was that the evaluation effort should be rooted in the process and product of the workshop. Stated differently, outcomes should be consistent with the workshop goals and instructional methodology. Assessment of the workshop processes and products was conducted via a preassessment device administered before the workshop, a set of instruments administered during the first and last hours of the workshop, and by the maintenance of a master performance record for the group.

A 12-item preassessment checklist, serving as a diagnostic device, was completed by each participant at his/her work station approximately two weeks before the workshop. Analysis of the preassessment checklist responses indicated the general level of perceived competence each participant reported for the workshop goals. Based on these checklist responses, groups of individuals requiring similar types of instructional assistance were identified prior to the actual workshop.

The most important focus of product evaluation involves the number of participants successfully achieving the explicitly stated workshop enabling objectives which were made public prior to instruction. The 20 specific enabling objectives were collapsed into 10 performance record statements as shown in Appendix A. Assessments of these data help analyze the effectiveness of the mastery learning approach of the workshop. Bloom, Hastings, and Madaus (1971) express the view that "given sufficient time and appropriate

types of help, 95 percent of students (the top 5 percent plus the next 90 percent) can learn a subject with a high degree of mastery" (p. 46). The onus is on instructors to select strategies that will take individual differences in terms of characteristics and needs into consideration in helping learners achieve mastery of learning tasks. Participants were encouraged to recycle products till criteria were met and various tactics were employed toward meeting the individual differences of the workshop participants.

Table 1 presents mastery of the performance record statements data for the workshop participants. All 19 participants mastered seven of the 10 performance record statements. Performance record statements two, seven, and eight were mastered by 18 of the 19 participants. For the entire group, 187 out of 190 performance record statements were mastered for an overall completion percentage rate of 98.4%. This figure strongly supports the position taken by Bloom, Hastings, and Madaus concerning the mastery learning concept. Moreover, there is every reason to believe that allowing more time for completion would be meeting the individual needs and characteristics of those participants not demonstrating total mastery by the closing hour of the intensive five-day workshop.

The Values Inventory Page (VIP) was a simple paper and pencil device to ascertain participants' self-reports of importance given the values equality, true friendship, wisdom, imagination, logic, and inner harmony. The purpose of the VIP was an attempt to identify the early adopters and laggards within the group by extending Hodgkinson's research. Each participant indicated the importance he/she gave each value by marking a point on a 1 to 10 continuum (ten being the highest point value). Next, they ranked the values on their importance from one (the highest) to six (the lowest).

Table 1

Mastery of Performance Record Statements[a] by Participants (N=19)

Performance Record Statement	Number of Participants Completing Mastery	Percent Completing Mastery[b]
1	19	100
2	18	94.7
3	19	100
4	19	100
5	19	100
6	19	100
7	18	94.7
8	18	94.7
9	19	100
10	19	100

[a]See text and Exhibit A for an explanation of these statements.

[b]The overall completion rate for all performance record statements by the total group was 98.4%.

In scoring the VIPs, it was determined that the workshop participants were reluctant to differentiate the importance they placed on the six values as noted by: (a) several participants marking "ten" for all six values, (b) some participants chose not to complete this portion of the instrument, and (c) others wrote question marks over the value scales. However, it was possible to score the participants' rankings of the values. The combined participants' rankings of the six values before and after the workshop appear in Table 2. One observation gleaned from the data display is that the group

Table 2

Participants' Ranking of Values Before and After the Workshop

Value	Before Workshop Ranking	After Workshop Ranking
Wisdom	1	1
Inner Harmony	2	2
True Friendship	3	4
Equality	4	3
Logic	5	5
Imagination	6	6

as a whole ranked the value inner harmony second both before and after the workshop. Recall that Hodgkinson found this value to be correlated significantly with change orientation: inner harmony ranked higher for the laggards than the early adopters. Also, other than the change in the ranking positions of true friendship and equality before and after the workshop, the values were ranked rather consistently by the group.

The Self-ratings of Workshop Topics (SOWT) instrument elicited participants' self-reports about knowledge and experience of curriculum concepts. Curriculum topics specifically related to the workshop were contained in a list of 23 curriculum concepts. The self-ratings response range was a continuum from 1 (The term has no meaning to me) to 5 (I have studied the topic in depth and/or have had much contact through observation or practice). It was hypothesized that posttest results of selected items under study would differ significantly from pretest scores. The statistical procedure used to analyze these data is the t-test for dependent samples with a matched pairs

design (Bialock, 1972). In this design the same individuals are compared before and after an experimental variable has been introduced. Thus, this design analyzes a pair of scores for each participant as a check of group differences of self-ratings. The experimental variable in this case was the competency-based staff development workshop.

Results of the pre- and posttest administration of the self-ratings of curriculum concepts are displayed in Table 3. Pretest means indicate the

Table 3

Mean Scores[a] and t Values for Participants' Self-Ratings of Curricular Concepts

Curriculum Concept	Pretest $\bar{X}$	Posttest $\bar{X}$	t Value	Level of Significance
Domains of Behavior	4.00	4.47	-3.39	.01
Flowcharting	3.42	4.37	-5.66	.001
Instructional Objectives	4.42	4.63	-2.20	.05
A Learning System Model	3.21	4.37	-5.62	.001
Criterion-Referenced Measurement	3.68	3.84	-0.83	NS
Competency-Based Education	3.68	4.26	-3.64	.01

[a]Possible response range was 1-5.

participants had either a general idea or some specific knowledge and/or experience with the six curriculum concepts analyzed. They were most confident about instructional objectives and domains of behavior. The hypothesis that posttest means would differ significantly from the pretest means was supported for five of the six workshop topics. Significant differences were

attained for the topics of domains of behavior, flowcharting, instructional objectives, a learning system model, and competency-based education. Only the topic of criterion-referenced measurement failed to register a significant difference.

Assessment of participant attitudes towards the workshop, its instructional strategy, the learning system model, and the co-leaders were elicited from two opinionnaires administered at the conclusion of the workshop. First, the POst Workshop Evaluation (POWE) instrument obtained participants' attitudes about: (a) the workshop enabling objectives, (b) the workshop learning activities, (c) the workshop co-leaders, (d) the evaluation and feedback techniques, and (e) open reactions. Second, attitudes toward competency-based education, the learning system model, and the total staff development workshop were obtained through the administration of Remmers' Scale for Measuring Attitudes Toward Any Practice.

Responses to Parts I and II of the POWE are presented in Table 4. Here it is shown that the participants held favorable attitudes toward the workshop enabling objectives. All participants either strongly agreed or agreed the objectives helped them recognize what performances they accomplished and also prescribed standards which helped them self-evaluate their performances. Almost 95% strongly agreed or agreed the workshop objectives were relevant models in their objective writing efforts and nearly 90% felt the objectives helped them recognize specifically how well they completed the expected performances. About 80% felt the objectives were structured so they could self-pace their learning throughout the week.

Table 4 discloses the participants holding favorable attitudes toward the workshop learning activities. All participants either strongly agreed or agreed that individual conferences with the co-leaders helped learning

Table 4

Participants' Attitudes Toward the Workshop Enabling Objectives and the Workshop Learning Activities

Evaluation Item	Percent[a] Strongly Agree	Percent Agree	Percent Disagree	Percent Strongly Disagree
The workshop enabling objectives:				
1. helped me to recognize specifically what performance I did during the workshop	57.9	42.1	0	0
2. helped me to recognize specifically how well I completed the expected performances	47.4	42.1	10.5	0
3. prescribed standards which helped me to self-evaluate my performances	42.1	57.9	0	0
4. were structured so that I could self-pace my learning throughout the week	26.3	52.6	21.1	0
5. were relevant in terms of providing me with a model to follow in my objective writing efforts	36.8	57.9	5.3	0
The workshop learning activities:				
6. were helpful to meaningful learning	31.6	57.9	15.8	0
7. were varied enough to suit me	26.3	57.9	15.8	0
8. afforded me options to master the workshop objectives	44.4	38.9	11.1	0
9. helped me to learn in individual conferences with the workshop co-leaders	63.2	36.8	0	0
10. helped me to learn from my peers in small groups or in one to one sessions	63.2	31.6	5.3	0

[a]Percentages were computed excluding the omits; only one omit was observed for these items.

while nearly 95% held the same opinions about small group or one-to-one sessions with their peers. About 90% of the participants strongly agreed or agreed the workshop learning activities afforded them options to master the workshop objectives. In only a few cases did a workshop participant disagree with any of the positively stated attitudinal items and only in one case did a participant strongly disagree with an item in Table 4.

Table 5 displays participants' ratings of the workshop evaluation and feedback techniques. Participants' possible ratings ranged from a high of

Table 5

Participants' Ratings[a] of Evaluation and Feedback Techniques

Evaluation and/or Feedback Technique	Highly Important	Very Important	Important	Not Too Important	Unimportant
Pretest	21.1	42.1	15.8	10.5	10.5
Performance Record	36.8	26.3	21.1	0	15.8
Sample Learning System Evaluation Checksheet	42.1	15.8	15.8	5.3	5.3
Oral Feedback	57.9	15.8	15.8	5.3	5.3
Written Feedback	33.3	33.3	27.8	5.6	0

[a]Reported as percentages of those responding excluding the omits; only one omit was observed for these items.

5 (very important) to a low of 1 (unimportant). The majority of the participants felt each of five evaluation and feedback techniques were either highly important or very important. Nearly 74% of the group felt oral feedback was highly important or very important while 67% of the participants felt the same way about the written feedback. The other three evaluation

and feedback techniques of pretest, the performance record, and the sample learning system evaluation checklist were all rated either highly important or very important by 58% to 63% of the participants. A few individuals felt each of five evaluation and feedback techniques were unimportant.

Workshop participants' ratings of the co-leaders' instructional efforts are shown in Table 6. The possible ratings ranged from a high of 5 (highly

Table 6

Participants' Ratings[a] of Workshop Co-leaders

Workshop Co-leaders' Instructional Practice	Highly Effective	Very Effective	Effective	Hardly Effective	Ineffective
Presentation of materials and information in full group settings	15.8	26.3	36.8	15.8	5.3
Instruction in small group settings	33.3	33.3	27.8	5.6	0
Instruction in individual conferences	68.4	31.6	0	0	0
Overall helpfulness and attitude in aiding you to solve problems	52.6	26.3	21.1	0	0
Organization of learning materials and learning activities	31.6	42.1	15.8	10.5	0

[a]Reported as percentages of those responding excluding the omits; only one omit was observed for these items.

effective) to a low of 1 (ineffective). All participants rated the co-leaders as highly effective or very effective at instruction in individual conferences. Nearly 80% of the participants felt the co-leaders were highly or very effective in their overall helpfulness and attitudes in aiding to

solve problems while nearly 74% held similar opinions regarding the co-leaders' organization of learning materials and learning activities. Two-thirds of the group felt the co-leaders were highly effective or very effective in small group settings. Less than half the group (42.1%) felt the co-leaders were highly effective or very effective in the presentation of materials and information in full group sessions while 21.1% rated the co-leaders as hardly effective or ineffective at this specific instructional mode.

Finally, the fifth part of the POWE instrument elicited participants' open reactions to the workshop. A total of 25 open comments were volunteered by the group; these comments were coded as being positive, negative, or neutral. Sixteen positive comments, six negative comments, and three neutral comments were offered by the participants. Following is a sample of the positive open comments from the participants:

> "A workshop should be for working. This one was."
>
> "This workshop has given us a common tool for communication."
>
> "With the exception of a few instances, the workshop was a fantastic experience for me. The interaction when working individually [with a co-leader] was beneficial. I feel more competent to attempt tasks which are my responsibility."
>
> "It seems to me that I did rather well--'grew.'"
>
> "The workshop was very helpful and I am eager to get on with implementing the systems approach in my own area of responsibility."
>
> "I really liked the way we were allowed to progress through the system and deal with our individual needs. It was a good example of CBE."
>
> "I really liked the way individualization was conducted with the learner."
>
> "I really liked the way co-leaders and colleagues helped out with problems."

"I really liked the way the materials and leaders were well prepared."

Participants' attitudes toward the workshop were also obtained and analyzed by Remmers' Scale for Measuring Attitudes Toward Any Practice. Remmers' Scale yielded the degree to which the group liked or disliked the practices of: (a) competency-based education, (b) the learning system model, and (c) the staff development workshop. Remmers states that 6.0 is the dividing point between favorable and unfavorable attitudes; mean scores above 6.0 denote favorable attitudes while mean scores below that figure denote unfavorable attitudes. Table 7 displays the results of the admin-

Table 7

Mean Scores[a] for Participants' Attitudes Toward Workshop Topics

Topic	N	Mean Score	Standard Deviation
Competency-Based Education	19	8.34	0.91
The Learning System Model	19	8.31	0.89
This Staff Development Workshop	19	7.95	1.16

[a]Source: Remmers' Scale for Measuring Attitudes Toward Any Practice, copyright, Purdue Research Foundation, 1960.

istration of Remmers' Scale. The resultant data display shows the participants held favorable attitudes towards all three topics. Also, the participants gave very similar mean scores to the three workshop practices.

CONCLUSIONS

A major conclusion based upon the findings presented in this document is that an intensive, competency-based, mastery learning workshop can be an effective diffusion strategy for statewide curriculum leaders to develop learning systems. Workshop participants mastered more than 98% of their workshop enabling objectives. Significant pre-posttest differences on participants' self-rating of competence with five of six workshop curriculum concepts were noted. Participants held favorable attitudes toward the workshop enabling objectives, workshop learning activities, and the evaluation and feedback techniques. Further, the majority of the group rated the workshop co-leaders as highly effective or very effective on four of five instructional tactics. Many favorable comments were volunteered by the participants. In addition, attitudes of the participants toward three workshop practices were rated favorably by a separate evaluation instrument.

A second conclusion based upon an analysis of participants' responses to attitudinal items and their open comments is that the use of explicitly stated instructional objectives combined with individual conferencing with participants seems to be the most appreciated instructional tactic by these statewide curriculum leaders. One hundred percent of the participants strongly agreed or agreed that the use of specific workshop objectives helped them recognize exactly what they did and also provided standards which helped them self-evaluate their performances. Also, 100% of the participants agreed the individual conferences with workshop co-leaders helped their learning and they rated the co-leaders as most effective at this instructional tactic. Oral feedback was rated as the most important evaluation and feedback technique during the workshop.

A final conclusion based on the overall data composite is that the statewide curriculum leaders in this workshop possess the competencies and attitudes representative of a proactive state department leadership role. All that remains to be seen is the actual diffusion of the learning system model in their divisional functions and projected activities.

RECOMMENDATIONS

Based on the experiences of the innovation diffusion strategy described herein, the following recommendations are made:

1. The elements of the learning systems model operationalized in this workshop should be utilized by the statewide curriculum leaders as a diffusion strategy.
2. Follow-up data should be collected relative to the participants on-the-job behaviors regarding the implementations of the innovative learning system model.
3. The use of the competency-based workshops should be considered seriously by other State Department of Education bureaus and divisions adopting innovations for their staff. Data should be collected to assess their effectiveness.
4. The use of full group or small group follow-up sessions for those staff members requesting or requiring aid in the implementation of the learning system model should be considered by the Director of the Division of Instructional Learning Systems.

REFERENCES

Adamsky, R. A. The effect of situational variables on the adoption behavior of vocational trade and industrial teachers with varying orientations to change (Doctoral dissertation, Rutgers, The State University of New Jersey, 1973). Dissertation Abstracts International, 1974, 34/07, 4097-A. (University Microfilms No. 73-32, 248)

Blalock, H. M. Social statistics (2nd ed.). New York: McGraw-Hill, 1972.

Bloom, B. S., Hastings, D. T., & Madaus, G. F. Handbook on the formative and summative evaluation of student learning. New York: McGraw-Hill, 1971.

Bureau of Learning Systems. Statement of goals and functions. Unpublished paper, no date.

Bushnell, D. S. A systematic strategy for school renewal. Educational Technology, 1972, 12 (2), 27-33.

Davis, R. H., Alexander, L. T., & Yelon, S. L. Learning system design: An approach to the improvement of instruction. New York: McGraw-Hill, 1974.

Halloran, J. D. Attitude formation and change. Leicester: Leicester University Press, 1967.

Havelock, D. G. A guide to innovation in education. Ann Arbor: The University of Michigan, Institute for Social Research, 1970.

Hobar, N., & Priester, H. G. Competency based inservice education: An operational model. Paper presented to the West Virginia Association of Teacher Educators Annual Conference, November 1974, Fairmont, West Virginia.

Hodgkinson, W. K. Values as an affective measure of teacher orientation to innovation in education (Doctoral dissertation, The Pennsylvania State University, 1974). Dissertation Abstracts International, 1975, 36/03, 1466-A. (University Microfilms No. 75, 768)

Hull, W. L., & Wells, R. L. The classification and evaluation of innovations in vocational and technical education (Research and Development Series No. 71). Columbus: The Ohio State University, The Center for Vocational and Technical Education, 1972.

Kibler, R. J., Gegala, D. J., Barker, L. L., & Miles, D. T. Objectives for instruction and evaluation. Boston: Allyn & Bacon, 1974.

Lippitt, R., & Havelock, R. Needed research on research utilization. In National Conference on Diffusion of Educational Ideas, Research implications for educational diffusion. Lansing: Michigan Department of Education, Vocational Education Division, Research Coordinating Unit, 1968.

Meehan, M. L. An innovative competency-based vocational education model diffuses itself. Journal of Industrial Teacher Education, 1976, 13 (2), 34-44.

Miles, M. B. Innovation in education: Some generalizations. In M. B. Miles (Ed.), Innovation in education. New York: Columbia University, Teachers College, Bureau of Publications, 1964.

PDK National Study Committee on Evaluation. Educational valuation & decision making. Itasca, Illinois: F. E. Peacock Publishers, 1971.

Rogers, E. M. Diffusion of Innovations. New York: Free Press, 1962.

Rogers, E. M., & Shoemaker, F. F. Communication of Innovations. New York: Free Press, 1971.

Russell, E. B. Measurement of the change orientation of vocational teachers (Research and Development Series No. 77). Columbus: The Ohio State University, The Center for Vocational and Technical Education. 1972.

Taylor, D. B. On target: Annual report (Sixty-second report (twenty-first annual report) of the State Superintendent of Schools). Charleston, West Virginia Department of Education, 1975.

EXHIBIT A

WEST VIRGINIA DEPARTMENT OF EDUCATION

BUREAU OF LEARNING SYSTEMS

DIVISION OF INSTRUCTIONAL LEARNING SYSTEMS

WORKSHOP TERMINAL OBJECTIVES (TO) AND ENABLING OBJECTIVES (EO)

TO 1 Each workshop participant will accept learning system design as a viable educational alternative.

EO_1 Provided an opportunity in small and large group activities dealing with value systems, each workshop participant will share his/her personal beliefs about learning systems by completing the activity as directed by the workshop leaders.

EO_2 Given large group, small group, and individual instruction on the learning system model, shown a relevant example learning system, and given a standardized format for an example learning system model, each workshop participant will demonstrate competency in learning system design by preparing an original example learning system that: (1) contains, as a minimum, all the components listed in the standard format, and (2) is suitfor implementation within your divisional responsibilities.

TO 2 Each workshop participant will share his/her expertise and assist colleagues in achieving the workshop objectives.

EO_3 During the workshop week devoted to developing learning systems, each workshop participant will, at least once, share his/her expertise about a topic under discussion by the whole group.

EO_4 During the workshop week devoted to developing learning systems, each workshop participant will voluntarily assist at least one colleague in achieving his/her workshop objectives.

TO 3 Each workshop participant will recognize and/or match his/her instructional values with the characteristics of Competency-Based Education.

EO_5 During a values inventory activity or in conference with the workshop leaders, each workshop participant will recognize and/or match his/her instructional values with the characteristics of Competency-Based Education. Mastery of this objective will be attained when the participant matches a minimum of four self-perceived values with four characteristics of CBE as presented.

Workshop Objectives - 2

TO 4 Each workshop participant will write instructional objectives reflecting the domains and levels of learning.

EO_6 Given an unordered list of cognitive, affective, and psychomotor instructional objectives, each workshop participant will categorize via multiple choice selections the objectives into the cognitive, affective, and psychomotor domains of behavior according to the criteria established by Bloom, Krathwohl, and Simpson. Mastery equals 9 out of ten instructional objectives categorized correctly.

EO_7 Given a list of cognitive, affective, and psychomotor instructional objectives, each workshop participant will categorize the levels within domains of learning of the objectives. Mastery will be attained when the participant can identify instructional objectives for any two levels for each domain of learning according to criteria established by Bloom, Krathwohl, and Simpson.

EO_8 Given a list of instructional objectives written for the three domains of learning, each workshop participant will discriminate the elements of terminal objectives and enabling objectives by identifying the following five elements successfully 90% of the time: (1) learner term, (2) performance, (3) content term, (4) conditions, and (5) criterion.

EO_9 As a result of the achieving the competency level for the preceding two instructional objectives and participating in workshop learning alternatives, each workshop participant will demonstrate competency in writing Terminal Objectives and Enabling Objectives by preparing one original TO and one original EO for each of the domains of learning. Each TO will contain a learner term, a performance term, and a statement of content while each EO will contain the aforementioned plus a statement of conditions, and the criterion. Additionally, each TO will be related to each EO by each EO being written at least one level less in its domain according to criteria established by Bloom, Krathwohl, and Simpson. Mastery of this objective is 5 out of 6 objectives.

TO 5 Each workshop participant will analyze and evaluate the components of the learning system model as presented.

EO_{10} Given instruction on education terminology, each workshop participant will define the term model as it pertains to educational theory orally or in writing by defining it with one or more sentences containing the essence of the term or by differentiating it from two other related, but different, terms.

EO_{11} Given a blank sheet of paper, each workshop participant will identify the elements of the Type II learning system model by drawing and labeling the model as presented.

Workshop Objectives - 3

EO_{12} Following various learning alternatives pertaining to the elements of the Type II learning system model, each workshop participant will orally or in writing explain each element with a minimum of one sentence each.

EO_{13} Following various learning alternatives pertaining to the elements of the Type II learning system model, each workshop participant will orally or in writing explain the relationships/interactions of elements of the model. Mastery level for the objective is a minimum of four elements selected by the workshop leader explained with a minimum of one sentence each.

EO_{14} After writing an original example learning system, each participant will evaluate his/her work by completing an instructor-prepared evaluation checklist without leaving any blanks and which is 90% agreement with a workshop leader's evaluation.

TO 6 Each workshop participant will design an original example learning system appropriate to his/her divisional responsibilities.

EO_{15} Following instruction and provided examples, each workshop participant will draw and identify a minimum of three flowchart symbols as presented during the instruction.

EO_{16} Following instruction and after identifying three flowchart symbols, each workshop participant will explain the three symbols either orally or in writing with a minimum of one sentence each with characteristics congruent with the instruction.

EO_{17} Following instruction and after completing the above two objectives, each workshop participant will flowchart his/her learning system activities. Successful mastery will be attained when: (1) a minimum of two entry/exit points are identified and symbolized, (2) a minimum of five process activities are identified and symbolized, and (3) a minimum of two decision points are identified and symbolized and two alternative leaders are drawn.

EO_{18} After preparing original enabling objectives (one for each domain of learning), each workshop participant will select a minimum of two learning activities for his/her example learning system which are congruent with the previously prepared objectives.

EO_{19} After writing original enabling objectives and selecting congruent learning activities for his/her example learning system, each workshop participant will write criterion items for their example learning system preassessment, self-assessment, and post-assessment devices which are congruent with the previously prepared objectives according to the Mager objective item checklist.

Workshop Objectives - 4

EO_{20} Given alternative learning activities and relevant resources during the workshop week, each workshop participant will write an original example learning appropriate to his/her divisional responsibilities. Successful completion of this activity will be attained when the example learning system contains a rationale, learning objectives, a preassessment device, decision points, learning activities, and media/resources, a self-assessment device, and a post-assessment device according to the criteria established in the "Components of the Learning System."

APPENDIX A:

WORKSHOP INSTRUCTIONAL MATERIALS

ILS STAFF DEVELOPMENT

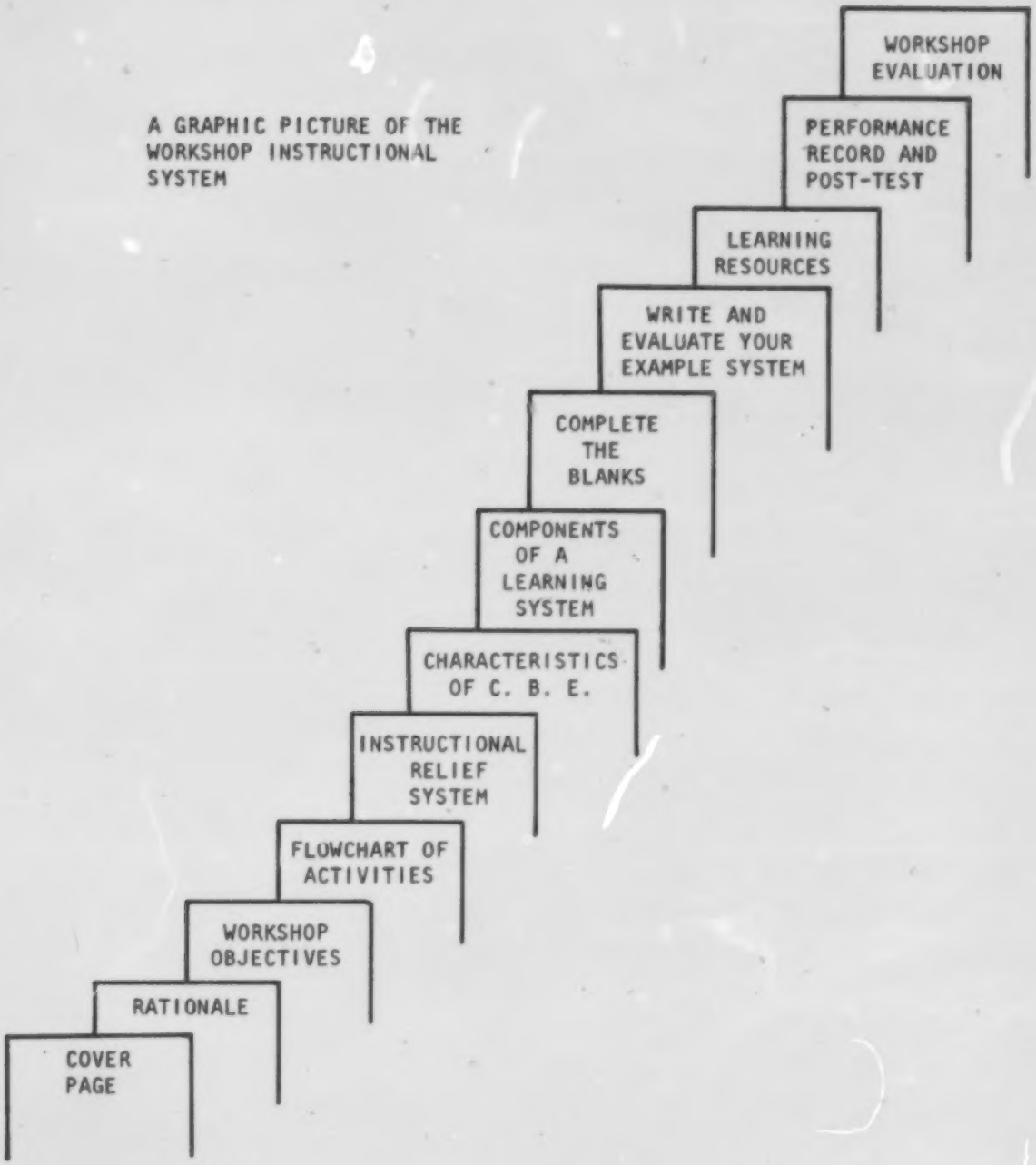
DEVELOPING LEARNING SYSTEMS

WEST VIRGINIA DEPARTMENT OF EDUCATION

BUREAU OF LEARNING SYSTEMS

DIVISION OF INSTRUCTIONAL LEARNING SYSTEMS

A GRAPHIC PICTURE OF THE WORKSHOP INSTRUCTIONAL SYSTEM



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RATIONALE

There has been a wide range of discussion about Competency-Based Education (CBE) with strong voices rising to be counted for the nays and ayes. Competency-based education may be compared to the parable of the three blind men who, while walking in the woods, came upon an elephant. The first blind man, who only felt the trunk of the elephant, thought he was feeling a snake. The second blind man, who only felt the ear of the elephant, thought he had found an unusual plant and the third blind man, who felt the stomach of the elephant, knew he found a whale. Likewise, CBE is many things to many people. Some people see it as behavioral objectives, others see it as individualized modules, and still others see it as flowcharting. In reality, it is all of those things and more.

The purpose of this workshop learning system is to share with you several elements of CBE. We hope the end result will produce a clearer picture of CBE and more importantly improve the teaching/learning process in the State of West Virginia.

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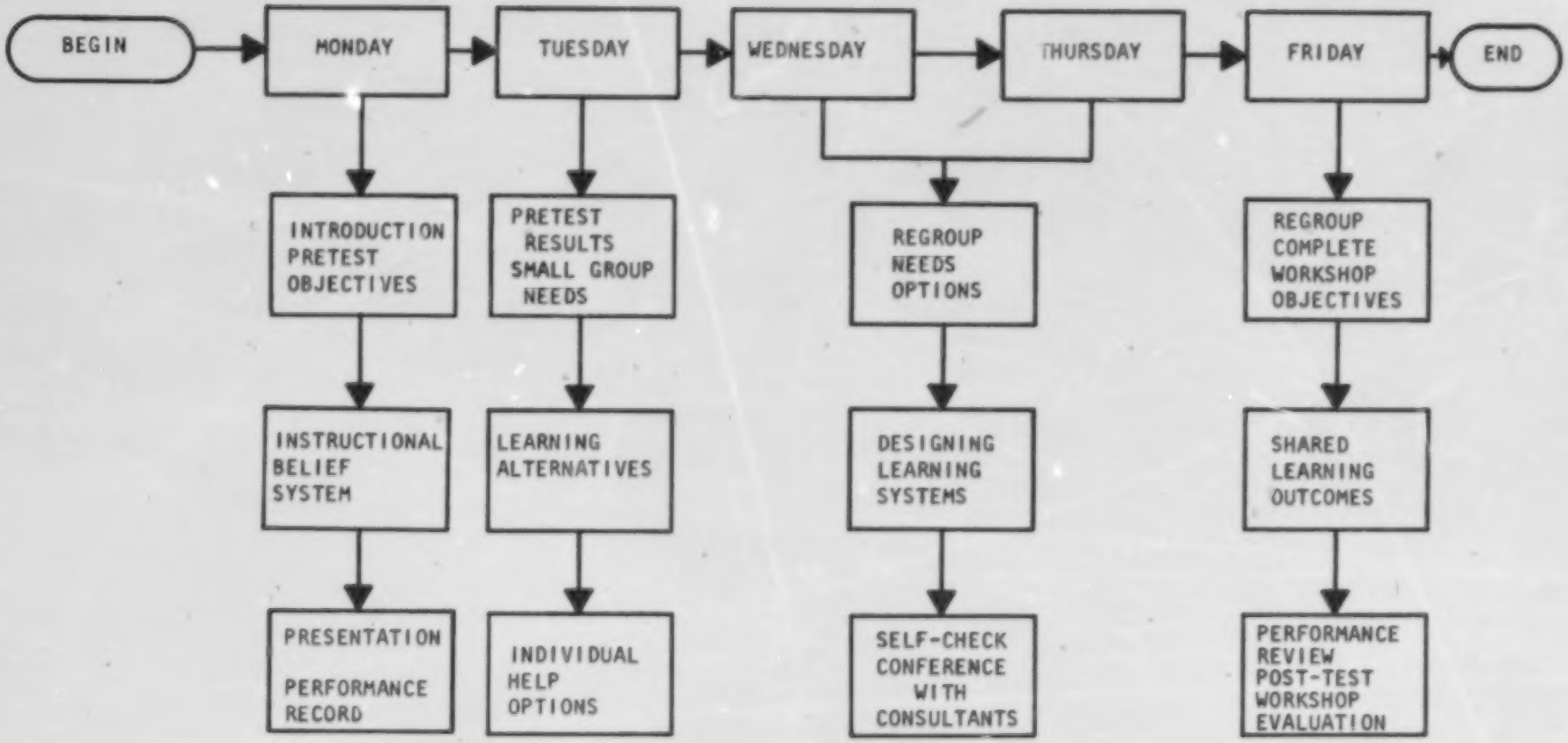
I.L.S. STAFF DEVELOPMENT WORKSHOP OBJECTIVES

1. Accept learning system design as a viable educational alternative.
2. Share expertise and assist colleagues in achieving the workshop objectives.
3. Recognize and/or match your instructional values with the characteristics of Competency-Based Education.
4. Write instructional objectives reflecting the domains and levels of learning.
5. Analyze and evaluate the components of the learning system model presented in the workshop.
6. Design an original example learning system appropriate for your divisional responsibilities.

ILS STAFF DEVELOPMENT:
DEVELOPING LEARNING SYSTEMS
5-9 JANUARY 1976

FLOWCHART OF ACTIVITIES



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INSTRUCTIONAL BELIEF SYSTEM

All of us have some value system which serves as a guide for what we eventually do. Within that value orientation, we educators have a subsystem related to our personal beliefs about education in the schools. Those values we hold regarding education provide a frame of reference for our personal professional goals. In addition, we tend to select professional activities related to our value system.

The issue then is, "How is one's value system related to education in general like, or different from, the characteristics related to Competency-Based Education (CBE)?" We maintain that if educational leaders were to specify their personal values and assumptions about education, they would find significant similarity between those personal values and the characteristics found in CBE.

The learning outcomes anticipated in this activity rests solely upon the accurate identification of your personal value system and the open interaction with your colleagues and workshop consultants. Within these simple guidelines, the broad goals suggest that you will:

1. Understand the values that are at play in your personal belief system.

2. Compare your values with the values and assumptions related to Competency-Based Education.

3. Accept the fact that though there are some differences, these differences are not insurmountable.

VALUES IN THE CLASSROOM*

STEP - 1:
Below are twenty-two values that might be displayed in various ways in a classroom. In your ideal classroom which are your top three? Place a 1 next to the quality you value most in your classroom, a 2 next to the second most important, and a 3 next to the third most important.

_____ Freedom	_____ Dogmatism
_____ Rigidity	_____ Orderliness
_____ Self-direction	_____ Favoritism
_____ Personal Choice	_____ Creativity
_____ Quiet	_____ Alienation
_____ Chaos	_____ Mutual Respect
_____ Laughter	_____ Privacy
_____ Passivity	_____ Equality
_____ Decision Making	_____ Dominance
_____ Fear	_____ Fairness
_____ Purposefulness	_____ Love

STEP - 2:
Now take a felt marker and list, in order, the three values you chose on a 3 x 5 card so that the words can be seen by others.

STEP - 3:
Walk around the room until you meet with other Educational Leaders displaying the same or nearly the same, values as you have indicated on your 3 x 5 card. Cluster into small groups of 4-5 Educational Leaders.

STEP - 4:
Discuss the values identified by your group and match them with the characteristics related to Competency-Based Education.

STEP - 5:
Write out your groups findings and share them with the total group.

---

*Source: Discovering Your Teaching Self, by Richard L. Curwin and Barbara Schneider Fuhrmann. Englewood Cliffs, N. J.: Prentice-Hall, 1974.

CHARACTERISTICS OF COMPETENCY-BASED EDUCATION*

1. The main indicator of student achievement is ability to do the job effectively and efficiently.

2. Learnings (competencies) are presented in small learning units or modules, combinations of which are designed to help students acquire full competence.

3. Entrance requirements are not of paramount concern. Students start where they are. If they are not ready, they are helped to become ready.

4. Provision is made for differences among students in their styles of learning by providing them with various alternate paths for acquiring competence.

5. Instruction is individualized/personalized and systematically planned for as an integral part of the education program.

6. The learning experience of the individual is guided by continuous evaluation and feedback.

7. The learner is held accountable for performance.

8. Instructors are held accountable for the extent to which students acquire the desired competencies within the limits dictated by their abilities.

9. Public sharing of the objectives, criteria, means of assessment, and alternative activities.

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*Source: John[illegible] Charles E. Journal of Teacher Education, 1974, p. 355-356.

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COMPONENTS OF THE LEARNING SYSTEM

Described below are components of a learning system. Some questions are included to help you prepare these components of your learning system.

I. CONCEPT: An abstract idea generalized from specifics - a title. "What is the main theme of the system?"

II. RATIONALE: This is an indication to the learner as to why the system/package is to be completed. In other words, it is a justification for involving a learner's efforts with a particular concept, skill, or attitude. It is a good idea to communicate to the learner how this system relates to the total scope and sequence of your instruction.

III. LEARNING OBJECTIVES: Behaviorally stated expected learner outcomes. "Specifically, what will be expected of the learner when he has completed this system/package?" These objectives will contain statements of the conditions under which the objectives will be performed, a description of the observable performance that will be accepted as evidence that learning has taken place, and a listing of the criteria or standards that will be used as the basis for evaluation. Any choice of reputable objective writing formats and terminology are acceptable. Other names for this LS component could be: behavioral objectives, instructional objectives, enabling objectives, performance objectives. This will depend upon the source you use for objective writing format.

IV. PRE-ASSESSMENT: A pre-evaluation which identifies, "What does the learner know about the concept, etc. before beginning?" Sometimes called a PRETEST.

V. POINT OF DECISION: A commitment is necessary at this point. The learner must choose the path appropriate to his/her knowledge of the subject and most successful mode of learning. He/she must answer, at various times, the following questions: 1) "Which activity or form of media is the most appropriate means for me to achieve the objectives of this system/package, 2) should I go on to the post-assessment or go back and try a different type of activity, and 3) are there additional aspects of this concept which I might further pursue?" This is a point between specific aspects of the system/package and usually occurs as directions or instructions.

Components of the Learning System - 2

VI. INSTRUCTION/LEARNING ACTIVITIES: Diversified learning activities and multimedia utilized to master the objective of the system/package. "What means are available so that the learner may master the objectives of this system/package?" Accommodations for different learning styles should be provided for in this component.

VII. SELF-EVALUATION: Self-assessment of progress toward achieving the objectives and answers the learner's question, "How well have I mastered the objectives?" Sometimes called a SELF-TEST.

VIII. DECISION: Similar to component number V described above.

IX. EVALUATION: This post-assessment determines if the learner has successfully mastered the objectives of the system/package. "Can he now do what the objective (and incidentally the instructor) expected of him?" Usually administered by the instructor and affords an excellent time to arrange for individual conferences. Sometimes called a POST-TEST or MASTERY TEST.

X. FEEDBACK: This component of the system provides information to the originator of the system/package, and the learner also, regarding the reliability and validity of the learning objectives component. Feedback may also provide valuable information concerning other components of the system/package.

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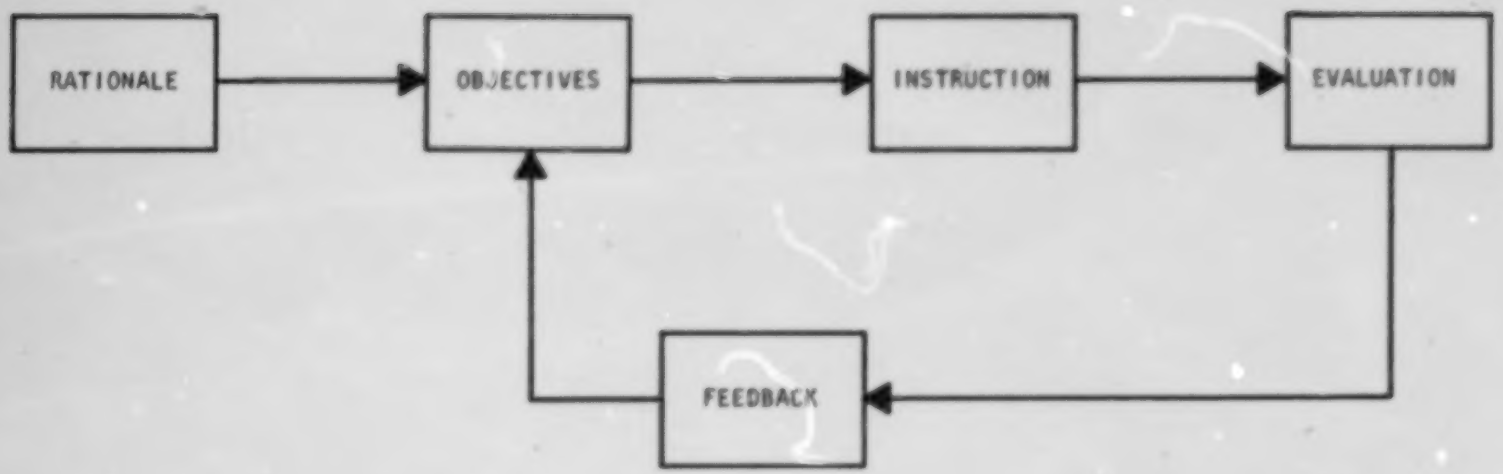

TYPE I MODEL

THE LEARNING SYSTEM MODEL

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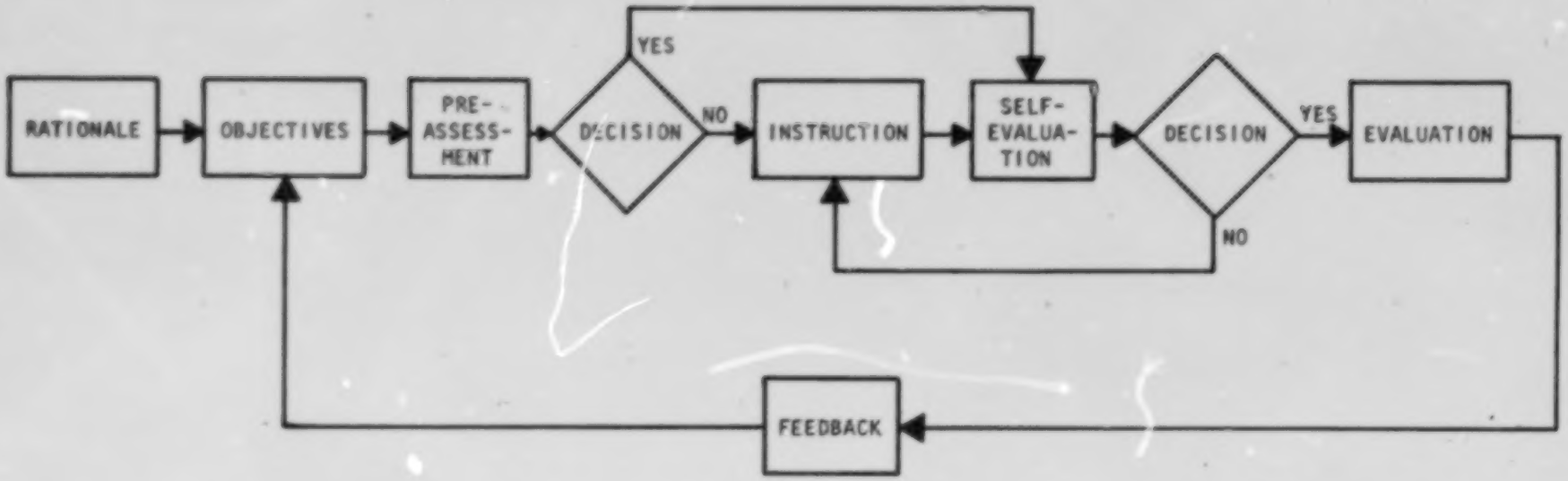

TYPE II MODEL

THE LEARNING SYSTEM MODEL

A SAMPLE LEARNING SYSTEM
(You Read It)

THE ALPHABET:

A LEARNING SYSTEM

THE ALPHABET

I. Concept: The alphabet

II. Rationale: The alphabet is one of the basic steps to learning. The student must learn the alphabet before learning to read or write. Tell the children that this package will show the importance of the alphabet and present various methods in learning their alphabet.

III. Terminal Objective: The student will be able to recognize, recite, and write the alphabet.

IV. Enabling Objectives: Given the letters of the alphabet, the student will be able to recognize and tell what each letter is with an accuracy of recognizing 23 out of 26 letters correctly.

Given the alphabet orally, the student will be able to repeat the alphabet orally and in sequence getting 22 out of 26 correct.

Given the letters of the alphabet, the student will be able to reproduce the letters in writing making 23 out of 26 correctly.

Given the capital and small letters of the alphabet, the student will be able to match corresponding letters getting 24 out of 26 correct.

Given the letters of the alphabet and pictures, the student will be able to match the letters to the beginning letter of the pictures with 95% accuracy.

V. Pre-assessment: The teacher will ask the children to:

1. Show recognition of capital and small letters by orally telling the teacher the name of each letter.
2. Write the capital and small letters.
3. Match capital and small letters.
4. Write their own name.

The Alphabet - 2

VI. Point of decision: The teacher will tell the children:

1. They may go to the self-test if they feel they can successfully achieve the objective of this package.

or

2. If students do not feel confident in their knowledge of the alphabet, then they may go to learning activities, and then to self-test and post-test. The children may choose the activities they feel they need to successfully complete the objectives of the package.

VII. Instruction/learning activities:

A. View tape and slide series of:
1. The alphabet
2. Alphabet rhyme

B. Flannel Board:
1. Feel shape of letters
2. Recognition of capital letters
3. Recognition of small letters
4. Sequence of letters
5. Match letters

C. Charts/Transparencies:
1. Follow steps in making letters
2. Practice making letters
3. Follow dots in sequence of letters to form pictures.
4. Color pictures using color/letter matching.
5. Write beginning sounds for pictures.

D. Book - Preschool Helper Alphabet:

1. Practice making letters.
2. Association of letter with picture.
3. Use lined paper to supplement in practicing the writing of the alphabet.

E. Picture/Letter Blocks:
1. Associate pictures with letters using large "blocks."
2. Use large "blocks" in practicing sequential order.
3. Use small "blocks" to match letter to picture.
4. Write beginning letter on small picture "blocks."

The Alphabet - 3

5. Use picture book for checking, matching, and sequence.
6. Use any of the picture "blocks" for picture, letter, and word association.

F. Plastic letters:
1. Recognition of capital letters
2. Shape of letters
3. Sequence letters
4. Form words

G. Flash cards:
1. Use to show sequence
2. Use in matching capital and small letters (self-checking)

H. View Master Picture Presentation:

1. View picture series for picture, letter, and word association.
2. Use rhyme and coloring book for picture, letter, word association, and for further interest with a story.

VIII. Self-evaluation: The teacher will tell the children to check their knowledge by using the self-checking activities.

IX. Point of decision: The teacher tells the students: You decide if you are ready for final evaluation.

The teacher will also check his/her own progress by viewing the progress of the students.

X. Evaluation: The post-test will be the same test given for the pre-test.

The teacher will ask the children to:

1. Show recognition of capital and small letters by orally telling the teacher the name of each letter.
2. Write the capital and small letters.
3. Match capital and small letters.
4. Write their own name.

XI. Quests:

1. The student will listen to record and read the book: Sesame Street - Letters.

2. Learn to play card game with alphabet cards.

3. Use phonic flash cards to show how letters go together to form different sounds.

The Alphabet - 4

4. Read books:

   a. Find Your ABC's by Richard Scarry.
   b. Use ABC Words Dictionary to show letter, word, picture, and definitions.
   c. Use ABC Book to Color to show many things that begin with each letter.
   d. ABC Book by Dean Bryant for picture, letter, and word association.
   e. The Sounds and Shapes of Letters provides many activities to do.
   f. Anno's Alphabet by Thomas Y. Crowell Company may be used for picture - letter association.
   g. Ride With Me Through A B C by Susan Bond and Horst Lemke for story about letters.
   h. What Does A Begin With? by Nancy Dingman Watson and Aldren A. Watson may be used for the story about letters.
   i. The Alphabet Book by P. D. Eastman may be used for picture, letter, and word association. (This book may also be used with the slide series.)

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A SAMPLE LEARNING SYSTEM
(You complete the blanks)

I. _____ The alphabet.

II. _____ The alphabet is one of the basic steps to learning. The student must learn the alphabet before learning to read or write. Tell the children that this package will show the importance of the alphabet and present various methods in learning their alphabet.

III. _____ The student will be able to recognize, recite, and write the alphabet.

IV. _____ Given the letters of the alphabet, the student will be able to recognize and tell what each letter is with an accuracy of recognizing 23 out of 26 letters correctly.

Given the alphabet orally, the student will be able to repeat the alphabet orally and in sequence getting 22 out of 26 correct.

Given the letters of the alphabet, the student will be able to reproduce the letters in writing making 23 out of 26 correctly.

Given the capital and small letters of the alphabet, the student will be able to match corresponding letters getting 24 out of 26 correct.

Given the letters of the alphabet and pictures, the student will be able to match the letters to the beginning letter of the pictures with 95% accuracy.

V. _____ The teacher will ask the children to:

1. Show recognition of capital and small letters by orally telling the teacher the name of each letter.
2. Write the capital and small letters.
3. Match capital and small letters.
4. Write their own name.

Complete the Blanks - 2

VI. _____ The teacher will tell the children:

1. They may go to the self-test if they feel they can successfully achieve the objective of this package.

or

2. If students do not feel confident in their knowledge of the alphabet, then they may go to learning activities, and then to self-test and post-test. The children may choose the activities they feel they need to successfully complete the objectives of the package.

VII. _____

A. View tape and slide series of:
   1. The alphabet
   2. Alphabet rhyme

B. Flannel Board:
   1. Feel shape of letters
   2. Recognition of capital letters
   3. Recognition of small letters
   4. Sequence of letters
   5. Match letters

C. Charts/Transparencies:
   1. Follow steps in making letters.
   2. Practice making letters.
   3. Follow dots in sequence of letters to form pictures.
   4. Color pictures using color/letter matching.
   5. Write beginning sounds for pictures.

D. Book - Preschool Helper Alphabet:

   1. Practice making letters.
   2. Association of letter with picture.
   3. Use lined paper to supplement in practicing the writing of the alphabet.

E. Picture/Letter Blocks:
   1. Associate pictures with letters using large "blocks."
   2. Use large "blocks" in practicing sequential order.
   3. Use small "blocks" to match letter to picture.
   4. Write beginning letter on small picture "blocks."

Complete the Blanks - 3

5. Use picture book for checking, matching, and sequence.
6. Use any of the picture "blocks" for picture, letter, and word association.

F. Plastic Letters:
1. Recognition of capital letters
2. Shape of letters
3. Sequence letters
4. Form words

G. Flash Cards:
1. Use to show sequence
2. Use in matching capital and small letters (self-checking)

H. View Master Picture Presentation:

1. View picture series for picture, letter, and word association.
2. Use rhyme and coloring book for picture, letter, word association, and for further interest with a story.

VIII. _____

The teacher will tell the children to check their knowledge by using the self-checking activities.

The teacher will also check his/her own progress by viewing the progress of the students.

IX. _____

The post-test will be the same test given for the pre-test.

The teacher will ask the children to:

1. Show recognition of capital and small letters by orally telling the teacher the name of each letter.
2. Write the capital and small letters.
3. Match capital and small letters.
4. Write their own name.

X. _____

XI. _____

1. The student will listen to record and read the book: Sesame Street - Letters.

2. Learn to play card game with alphabet cards.

3. Use phonic flash cards to show how letters go together to form different sounds.

Complete the Blanks - 4

4. Read books:

   a. Find Your ABC's by Richard Scarry.
   b. Use ABC Words Dictionary to show letter, word, picture, and definitions.
   c. Use ABC Book to Color to show many things that begin with each letter.
   d. ABC Book by Dean Bryant for picture, letter, and word association.
   e. The Sounds and Shapes of Letters provides many activities to do.
   f. Anno's Alphabet by Thomas Y. Crowell Company may be used for picture - letter association.
   g. Ride With Me Through A B C by Susan Bond and Horst Lemke for story about letters.
   h. What Does A Begin With? by Nancy Dingman Watson and Aldren A. Watson may be used for the story about letters.
   i. The Alphabet Book by P. D. Eastman may be used for picture, letter, and word association. (This book may also be used with the slide series.)

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A SAMPLE LEARNING SYSTEM
(You Write Your Own)

I. Concept:

II. Rationale:

III. Terminal Objective(s):

IV. Enabling Objectives:

V. Pre-assessment:

A Sample Learning System - 2

VI. Point of Decision:

VII. Instruction/Learning Activities:

VIII. Self-Evaluation:

IX. Point of Decision:

X. Evaluation:

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SAMPLE LEARNING SYSTEM EVALUATION CRITERIA

Name: _____ Date Completed: _____

PART I - Required Items: Read each of the following statements. If you demonstrated the behavior, encircle YES; if not, encircle NO.

The L.S. includes a:

1. legible format	YES	NO
2. concept, skill, or attitude which a learner can master on his own	YES	NO
3. minimum of (8) basic L.S. components	YES	NO
4. logical sequence of L.S. components	YES	NO

COMPETENCY: YES for items 1-4. If not, RECYCLE & REVISE.

PART II - Rating of Quality: Indicate the level to which each of the tasks have been performed by encircling the appropriate letter.
C = Competency & R = Recycle.

A. L.S. Components: To what extent do the components:

5. reflect a concept, skill, or attitude (Title)	C	R
6. provide a meaningful justification (Rationale)	C	R
7. contain all components of the (Instructional Objectives)	C	R
8. measure prerequisite behavior (Pre-assessment)	C	R
9. contain an adequate variety of (Instructional Activities)	C	R
10. diagnose learning via a (Self-Evaluation)	C	R
11. measure mastery of the instructional objectives (Evaluation)	C	R
12. allow for decision-making throughout the L.S. (Points of Decision)	C	R

Sample L.S. Evaluation Criteria - 2

B. Evaluation Techniques: To what extent:

13. can you take your instructional objectives and criterion items completely through the Mager flowchart assessment? C R

14. are the directions for the criterion items clearly and precisely stated? C R

15. are the correct answers shown, available from the teacher, or, if appropriate, rating scales or checklists provided? C R

Mastery of the COMPETENCY level for this learning experience will be evidenced by total agreement between you and the workshop consultant that you have achieved the competency rating on each of the items noted above.

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Model*

A model is a concretization of a theory which is meant to be analogous to or representative of the processes and variables involved in the theory. A model is said to be correct or adequate by its ability to produce the same data as the object in the real world produces, from which the original theory was generated. Models may be of several types, although the three most used examples in psychology are physical models, computer models, and mathematical models. To make this clearer, consider the following two examples. It is becoming common practice in medical schools to use manikins to teach neophyte doctors about the reactions of a human body under certain conditions. These manikins have certain typical human reactions built into them such as pupil contractions, heartbeat, respiratory responses, etc. Strictly speaking, such manikins are not exactly models but they are close enough to make a point. These manikins are physical analogues to a human body. They are expected to produce a certain sample of responses to specific stimuli just as a human body does. Not all human responses, of course, are produced and the manikin is assuredly not the same thing as a human body; nevertheless, it can act like a human body under specified conditions. Because doctors and physiologists have observed regularities in behavior and have certain ideas about why these regularities occur, they can build a model to duplicate these responses. Another example of a model is the physical representation of atoms commonly found in science expositions. These models are again a representation in the physical domain of what scientists believe an atom looks like in the microscopic domain. All such models have a necessary "as-if" quality about them, and they are usually closely tied to theory. Indeed, some writers contend that a model is a theory and they sometimes use these terms interchangeably. It is probably clearer to make the other assumption and say that a model will almost always represent a theory although it will not, strictly speaking, be one. We will discuss computer models in the chapter on information processing theories and mathematical models in the chapter on mathematical learning theories.

*Source: Snelbecker, Glen E. Learning Theory, Instructional Theory, and Psychoeducational Design. New York: McGraw-Hill, 1974, pp. 32-33.

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MASTERY LEARNING BELIEF SYSTEM*

1. Teaching is a process concerned with the MANAGEMENT of learning.
2. The role of the teacher is to:
   (a) specify what is to be learned,
   (b) motivate pupils to learn it,
   (c) provide pupils with instructional materials,
   (d) administer these learning materials at a rate suitable for each pupil,
   (e) monitor pupils' progress,
   (f) diagnose difficulties and provide proper remediation,
   (g) give review and practice that will maintain pupils' learning over long periods of time.

*Source: Block, J. H. (Ed.), Mastery Learning: Theory and Practice. New York: Holt, Rinehart & Winston, 1971.

DEFINING CHARACTERISTICS OF A CBTE MANAGEMENT SYSTEM - A RATIONALE*

Given the infinite organizational configurations possible, and the great variety of views regarding instructional management and the competency-based concept, one is often hard put to justify a particular model as being superior to others. This attempt is a first approximation of putting together a specific set of management system characteristics. Since the rationale builder has already detected flow of the rationale presented here, and has been made aware through the comments of colleagues of pertinent exclusions, it is fully expected that the present state of this rationale will be subject to much criticism, as it should be.

The thought that stimulated this exercise was the perception that individuals espousing a competency-based teacher education model must often install their model under an existing management system that may or may not be conducive to the effective and efficient administration of their model. To the degree that the following rationale can be trusted, it provides strong implications for the defining characteristics of a management system for a competency-based teacher education program. It should also provide a counter-response to those highly verbal colleagues of ours, who for one reason or another attempt to prevent the successful adoption of a CBTE program through a variety of verbal holding actions.

1. CBTE requires a student to demonstrate mastery of learning behaviors, by meeting explicit performance criteria.

2. Explicit performance criteria implies explicit performance objectives (behavior objectives).

3. If a student is not permitted to advance until he has mastered prerequisite behaviors, and since students vary in the length of time required to master a particular behavior, it is unreasonable to expect them to progress at the same rate.

4. Therefore, mass instruction is not a reasonable instructional alternative.

5. Since individual tutoring on a large scale is beyond the means of most teacher education institutions, the most reasonable alternative is some form of self-instruction through the technology of automation.

6. While it is evident that many behaviors can be learned through a self-instructional process, the state of the art is such that behaviors in the higher levels of taxonomic categories, such as Synthesis and Evaluation, require verbal interaction between and among individuals.

7. Implicit in the above statement is the view that learners vary in the kinds of strategies that they apply to the learning of a specific concept, and that the multibranch condition of verbal interaction is one means of rearranging the learning stimuli to fit a preferred learning style.

CBTE Management System - 2

8. If the above is true, then the skills required of a teacher or instructional manager in a CBTE program are different both in degree and kind from those required of a traditional program.

9. First, if an instructional manager is to set up optimal learning conditions for students, he/she must be able to identify their learning strategy modes, or learning styles, and either develop conditions that complement that mode, or train the student to use a different learning strategy that agrees with the instructional system.

10. Second, given that the instructor's personal interaction with the student will now be primarily concerned with higher levels in the taxonomy, the kinds and range of student reactions will require a much greater subject-matter depth on the part of the instructor in the CBTE program, than was required in a more traditional program where the student's focus and response could be more narrowly controlled.

11. The requirement of developing conditions to complement a student's individual learning style is not limited to verbal interaction situations between the student and the instructor, or other students, but includes self-instructional situations. That is, for a group of students, a number of alternative self-instructional tracks complementing different learning styles, need to be developed for the learning of a particular concept, or set of concepts.

12. Third, the instructional manager must be skilled in practicing and teaching students the use of skills that facilitate individualized learning (i.e., inquiry skills).

13. It is doubtful that any one person can develop the plethora of skills and knowledges required to effectively set up and manage the conditions of learning implied by the above requirements.

14. Therefore, an interdisciplinary approach will be required, suggesting team management of instruction.

15. Since such an interdisciplinary instructional team would cut across several college departments, resources would be required of all departments for running the CBTE program.

16. Because departments are organized to defend their resources, their structure is viewed as antithetical to interdisciplinary team operation.

CBTE Management System - 3

17. Since the CBTE program is based on explicit performance objectives, all personnel, spatial, material, equipment, and process needs can be related directly to the objectives, and to the effects of the instructional methods as measured by the explicit performance criteria. Since this data are available to the interdisciplinary instructional team, they are able to report these needs to the college budgeting authority (Division level?) in a very objective and defensible manner.

18. Since the above conditions are those primarily required for the operation of a Program Planning, Evaluation, and Budgeting System (PPBS), maximum efficiency could be derived from the college's resources.

19. There is no great evidence that suggests that any of the responsibilities presently carried out by departments cannot be carried out as efficiently by the teams and division level personnel.

20. Since the purpose of the CBTE program is to produce teachers who are effective in changing their students behaviors, the effects of the CBTE program must be related to the teacher's effect on those students.

21. This means that relationships must be established with the public schools that will enable the setting up of conditions to measure the effects of the teachers we prepare on their students.

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*Source: Castelle G. Gentry, University of Toledo, Fall, 1972, (Mimeo).

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WHAT'S IN A NAME?

OR

A ROSE BY ANY OTHER NAME...

	SOURCE	DESIGNATION
1.	Developing Teacher Competencies, James E. Weigand, Editor	Performance Objectives
2.	Instructional Development Institute,	Performance Objectives
3.	Writing Behavioral Objectives, H. H. McAshan	Behavioral Objectives
4.	Behavioral Objectives and Instruction, Kibler, Barker & Miles	Behavioral Objectives
5.	Behavioral Objectives in Curriculum and Evaluation, Bernabei & Leles	Behavioral Objectives
6.	Preparing Instructional Objectives, Mager	Instructional Objectives
7.	Objectives For Instruction and Evaluation, Kibler, Cegala, Barker & Miles	Instructional Objectives
8.	Planning An Instructional Sequence Popham & Baker	Instructional Objectives

CONDENSED INFORMATION ON

PREPARATION AND USE OF EDUCATIONAL OBJECTIVES

Objectives

Once an instructor decides he/she will teach his/her students something, several kinds of activity are necessary on his part if he/she is to succeed. He/she must first decide upon the goals he/she intends to reach at the end of his/her course or program. He/she must then select procedures, content, and methods that are relevant to the objectives: cause the student to interact with appropriate subject matter in accordance with principles of learning and, finally, measure or evaluate the student's performance according to the objectives or goals originally selected.

The first of these, the description of objectives is the theme of the attached information. If you are interested in preparing instruction that will help you reach your objectives, you must first be sure your objectives are clearly and unequivocally stated. You cannot concern yourself with the problem of selecting the most efficient route to your destination until you know what your destination is.

The attached material has been selected to expose you to this system. It is assumed that participants will want to pursue the subject further by studying the information developed by the authors.

PREPARING OBJECTIVES FOR PROGRAMMED INSTRUCTION

Robert F. Mager

I. OBJECTIVES

A. Terms which bear defining:

1. BEHAVIOR - refers to any visible activity displayed by a learner (student).
2. TERMINAL BEHAVIOR - refers to the behavior you would like your learner to be able to demonstrate at the time your influence over him/her ends.
3. CRITERION - is a standard or test by which terminal behavior is evaluated.

II. WHY WE CARE ABOUT OBJECTIVES

A. Objectives

1. An objective is an intent communicated by a statement describing a proposed change in a learner -- a statement of what the learner is to be like when he/she has successfully completed a learning experience. It is a description of a pattern of behavior (performance) we want the learner to be able to demonstrate.

2. Another important reason for stating objectives sharply relates to the evaluation of the degree to which the learner is able to perform in the manner desired.

B. Course Description

1. A course description tells you something about the content and procedures of a course, a course objective describes a desired outcome of a course.

PREREQUISITES	DESCRIPTION	OBJECTIVES
What a learner has to do to qualify for a course.	What the course is about.	What a successful learner is able to do at the end of the course.

2. Whereas an objective tells what the learner is to be like as a result of some learning experiences, the course description tells only what the course is about.

III. THE QUALITIES OF MEANINGFUL OBJECTIVES

A. Meaningful Objectives

1. Basically, a meaningfully stated objective is one that successfully communicates to the reader the writer's instructional intent.
2. It is meaningful to the extent it conveys to others a picture (of what a successful learner will be like) identical to the picture the writer has in mind. Since a statement of an objective is a collection of words and symbols, it is clear that various combinations may be used to express a given intent.
3. A meaningfully stated objective then, is one that succeeds in communicating your intent; the best statement is the one that excludes the greatest number of possible alternatives to your goal.
4. Unfortunately, there are many "loaded" words, words open to a wide range of interpretations. To the extent that we use ONLY such words, we leave ourselves open to misinterpretation.

Consider the following examples of words:

WORDS OPEN TO MANY INTERPRETATIONS	WORDS OPEN TO FEWER INTERPRETATIONS
to know	to write
to understand	to recite
to <u>really</u> understand	to identify
to appreciate	to differentiate
to <u>fully</u> appreciate	to solve
to grasp the significance of	to construct
to enjoy	to list
to believe	to complete
to have faith in	to contrast

5. What do we mean when we say we want a learner to "know" something? Do we mean that we want him/her to be able to recite, or to solve, or to construct? Just to tell him/her we want him/her to "know" tells him/her little--the word can mean many things.

   a. Though it is all right to include such words as <u>understand</u> and appreciate in a statement of an objective, the statement is not explicit enough to be useful until it indicates how you intend to sample the <u>understanding</u> and <u>appreciating</u>.

   b. Until you describe what the learner will be DOING when demonstrating that he <u>understands</u> or <u>appreciates</u> you have described very little at all. Thus, the statement which communicates best will be one which describes the terminal behavior of the learner well enough to preclude misinterpretation.

B. Writing Objectives

1. Identify the terminal behavior by name. We can specify the kind of behavior which will be accepted as evidence that the learner has achieved the objective.
2. Try to further define the desired behavior by describing the important conditions under which the behavior will be expected to occur.

IV. <u>IDENTIFYING THE TERMINAL BEHAVIOR</u>

A. An objective statement is used to the extent that it specifies what the learner must be able to DO or PERFORM when he is demonstrating his/her mastery of the objective.

B. The most important characteristic of a useful objective is that it <u>identifies the kind of performance</u> which will be accepted as evidence that the learner has achieved the objective.

C. SUMMARY

1. An instructional objective describes an intended outcome rather than a description or summary of content.
2. One characteristic of a usefully stated objective is that it is stated in behavioral, or performance, terms that describe what the learner will be DOING when demonstrating his/her achievement of the objective.
3. The statement of objectives for an entire program of instruction will consist of several specific statements.
4. The objective which is most usefully stated is one which communicates the instructional intent of the person selecting the objective.

V. FURTHER DEFINING THE TERMINAL BEHAVIOR

A. By the time you have written an objective which identifies the behavior you will expect your learners to exhibit when they have successfully completed your program, you will have written a far less equivocal objective than most which are in use today. Rather than expect your students to define what you might have in mind when using such ambiguous words as understand, know, or appreciate, you will have at least identified for him/her (and for yourself) the kind of activity which will be accepted as evidence of achievement. And more importantly perhaps, you will have begun to specify your content for your instructional program and which will provide you with a basis for evaluating programs prepared by others.

B. To state an objective that will successfully communicate your educational intent, you will sometimes have to further define terminal behavior by stating the conditions you will impose upon the learner when he/she is demonstrating his/her mastery of the objective. Here are some examples:

Given a problem of the following class...
Given a list of...
Given any reference of the learner's choice...
Given a matrix of intercorrelations...
Given a standard set of tools...
Given a properly functioning...
Without the aid of references...
Without the aid of slide rule...
Without the aid of tools...

C. For example, instead of simply specifying to be able to solve problems in algebra, we could improve the ability of the statement to communicate by wording it something like this:

> Given a linear algebraic equation with one unknown, the learner must be able to solve for the unknown without the aid of references, tables, or calculating devices.

How detailed should you be in your definition of terminal behavior? Detailed enough to be sure the target behavior would be recognized by another competent person, and detailed enough so that other possible behaviors would not be mistaken for the desired behavior. Detailed enough, in other words, so that others understand your intent as YOU understand it.

D. Here are some questions you can ask yourself about your objectives as a guide to your identifying important aspects of the terminal behaviors that you wish to develop.

1. What will the learner be provided?
2. What will the learner be denied?
3. What are the conditions under which you will expect the terminal behavior to occur?
4. Are there any skills which you are specifically NOT trying to develop? Does the objective exclude such skills?

E. SUMMARY

1. An instructional objective is a statement that describes an intended outcome of instruction.
2. An objective is meaningful to the extent it communicated an instructional intent to its reader, and does so to the degree that it describes or defines the terminal behavior expected of the learner.
3. Terminal behavior is defined by:
   a. identifying and naming the observable act which will be accepted as evidence that the learner has achieved the objective, and by
   b. describing the conditions (given, restrictions) necessary to exclude acts that will not be accepted as evidence that the learner has achieved the objective.

VI. STATING THE CRITERION

A. Now that we have described what we want the learner to be able to do, we can increase the ability of an objective to communicate by telling the learner HOW WELL we want him/her to be able to do it. We will accomplish this by describing the criterion of acceptable performance.

B. Probably the most obvious way to indicate a lower limit of acceptable performance is to specify a time limit where one is appropriate.

If for example, we are teaching mathematics and expect our students to develop a certain amount of problem-solving proficiency, we might use these italicized words in our objectives:

> "The student must be able to correctly solve at least seven simple linear equations *within a period of thirty minutes*."

C. One of the ways of defining acceptable performance, then, is by indicating a time limit--whenever a time limit is intended. Another way to indicate a criterion of successful performance is to specify the minimum number of correct responses you will accept, or the number of principles which must be applied in a given situation, or the number of principles which must be spelled correctly. For example:

> "Given a human skeleton, the student must be able to correctly identify by labeling at least 40 of the following bones: there will be no penalty for guessing (list of bones inserted here)."

We see that the minimum acceptable skill is specified in terms of the number of bones to be identified. The student must be able to correctly identify at least 40 items and he/she is encouraged to guess.

D. An alternative to indicating number is to indicate percentage or proportion. Thus, if appropriate, we could indicate that:

> "The student must be able to reply in grammatically correct French to 95% of the French questions that are put to him/her during the examination."

or we could specify:

> "The student must be able to spell correctly at least 80% of the words called out to him/her during an examination period."

or we could specify:

> "The student must be able to write the names and addresses of at least three-fifths of the five New York doctors who recommend the ingredients in Brand X."

E. One good way to get started is to look over the examinations you use; these will tell you what you are using as standards of performance and you can improve your objectives by putting these standards into words. Once this is done, you can ask these questions of your statements to test their clarity and completeness:

Objectives - 7

1. Does the statement describe what the learner will be doing when he/she is demonstrating that he/she has reached the objective?

2. Does the statement describe the important conditions (given and/or restrictions) under which the learner will be expected to demonstrate his/her competence?

3. Does the statement indicate how the learner will be evaluated? Does it describe at least the lower limit of acceptable performance?

F. FINAL SUMMARY

1. A statement of instructional objectives is a collection of words or symbols describing one of your educational intents.

2. An objective will communicate your intent to the degree you have described what the learner will be DOING when demonstrating his/her achievement and how you will know when he/she is doing it.

3. To describe terminal behavior (what the learner will be DOING):

   a. Identify and name the over-all behavior act.
   b. Define the important conditions under which the behavior is to occur (given and/or restrictions and limitations).
   c. Define the criterion of acceptable performance.

4. Write a separate statement for each objective; the more statements you have, the better chance you have of making your intentions clear.

5. If you give each learner a copy of your objectives, you may not have to do much else.

Source: Preparing Instructional Objectives, Robert F. Mager, Fearon Publishing Company, 828 Valencia Street, Palo Alto, California 94302

Educational Objectives, Vimcet Associates, P. O. Box 24714, Los Angeles, California 90024

MAJOR CATEGORIES IN THE COGNITIVE DOMAIN
(Bloom, 1956)

SOURCE: Gronlund, N. E. Measurement and evaluation in teaching. New York: The MacMillan Company, 1971.

Descriptions of the Major Categories in the Cognitive Domain	Process Terms For Essential Competencies	Observable Behavior Verbs For Learner Outcomes
1. Knowledge. Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.	Know common terms Know specific facts Know methods and procedures Demonstrate knowledge of basic concepts Demonstrate knowledge of principles	Defines, describes, identifies, labels, lists, matches, names, outlines, reproduces, selects, states
2. Comprehension. Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.	Understand facts and principles Interpret verbal material Interpret charts and graphs Translate verbal material to mathematical formulas Estimate future consequences implied in data Justify methods and procedures	Converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, paraphrases, predicts, rewrites, summarizes
3. Application. Application refers to the ability to use learned material in new and concrete situations. This may include the applications. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.	Apply concepts and principles to new situations Apply laws and theories to practical situations Solve mathematical problems Construct charts and graphs Demonstrate correct usage of a method or procedure	Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses
4. Analysis. Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.	Recognize unstated assumptions Recognize logical fallacies in reasoning Distinguish between facts and inferences Analyze the organizational structure of a work (art, music, writing)	Breaks down, diagrams, differentiates, discriminates, identifies, illustrates, infers, outlines, points out, relates, selects, separates, subdivides
5. Synthesis. Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operation (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.	Write a well organized theme Give a well organized speech Write a creative short story (or poem, or music) Propose a plan for an experiment Integrate learning from different areas into a plan for solving a problem Formulate a new scheme for classifying objects (or events, or ideas)	Categorizes, combines, complies, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, revises, rewrites, summarizes, tells, writes
6. Evaluation. Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus conscious value judgments based on clearly defined criteria.	Judge the logical consistency of written material Evaluate the adequacy with which conclusions are supported by data Assess the value of a work (art, music, writing) by use of internal criteria Appraise the value of a work (art, music, writing) by use of external standards of excellence	Compares, concludes, contrasts, criticizes, describes, discriminates, explains, justifies, interprets, relates, summarizes, supports

MAJOR CATEGORIES IN THE AFFECTIVE DOMAIN
(Krathwohl, 1964)

SOURCE: Gronlund, N. E. Measurement and Evaluation in teaching. New York: The MacMillan Company, 1971.

Descriptions of the Major Categories in the Affective Domain	Process Terms For Essential Competencies	Observable Behavior Terms For Learner Outcomes
1. Receiving. Receiving refers to the student's willingness to attend to particular phenomena or stimuli (classroom activities, textbook, music, etc.). From a teaching standpoint, it is concerned with getting, holding, and directing the student's attention. Learning outcomes in this area range from the simple awareness that a thing exists to selective attention on the part of the learner. Receiving represents the lowest level of learning outcomes in the affective domain.	Listen attentively Show awareness of the importance of learning Show sensitivity to human needs and social problems Accept differences of race and culture Attend closely to the classroom activities	Asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits erect, replies, uses
2. Responding. Responding refers to active participation on the part of the student. At this level he not only attends to a particular phenomenon but also reacts to it in some way. Learning outcomes in this area may emphasize acquiescence in responding (reads assigned material), willingness to respond (voluntarily reads beyond assignment), or satisfaction in responding (reads for pleasure or enjoyment). The higher levels of this category include those instructional objectives that are commonly classified under "interest"; that is, those that stress the seeking out and enjoyment of particular activities.	Complete assigned homework Obey school rules Participate in class discussion Complete laboratory work Volunteer for special tasks Show interest in subject Enjoy helping others	Answers, assists, complies, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes
3. Valuing. Valuing is concerned with the worth or value a student attaches to a particular object, phenomenon, or behavior. This ranges in degree from the more simple acceptance of a value (desires to improve group skills) to the more complex level of commitment (assumes responsibility for the effective functioning of the group). Valuing is based on the internalization of a set of specified values, but clues to these values are expressed in the student's overt behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value clearly identifiable. Instructional objectives that are commonly classified under "attitudes" and "appreciation" would fall into this category.	Demonstrate belief in the democratic process Appreciate good literature (art or music) Appreciate the role of science (or other subjects) in everyday life Show concern for the welfare of others Demonstrate problem-solving attitude Demonstrate commitment to social improvement	Completes, describes, differentiates, explains, follows, forms, initiates, invites, joins, justifies, proposes, reads, reports, selects, shares, studies, works
4. Organization. Organization is concerned with bringing together different values, resolving conflicts between them, and beginning the building of an internally consistent value system. Thus the emphasis is on comparing, relating, and synthesizing values. Learning outcomes may be concerned with the conceptualization of a value (recognizes the responsibility of each individual for improving human relations) or with the organization of a value system (develops a vocational plan that satisfies his need for both economic security and social service). Instructional objectives relating to the development of a philosophy of life would fall into this category.	Recognize the need for balance between freedom and responsibility in a democracy Recognize the role of systematic planning in solving problems Accept responsibility for his own behavior Understand and accept his own strengths and limitations Formulate a life plan in harmony with his abilities, interests, and beliefs	Adheres, alters, arranges, combines, compares, completes, defends, explains, generalizes, identifies, integrates, modifies, orders, organizes, prepares, relates, synthesizes
5. Characterization by a Value or Value Complex. At this level of the affective domain, the individual has a value system that has controlled his behavior for a sufficiently long time for him to have developed a characteristic "life style." Thus the behavior is pervasive, consistent, and predictable. Learning outcomes at this level cover a broad range of activities, but the major emphasis is on the fact that the behavior is typical or characteristic of the student. Instructional objectives that are concerned with the student's general patterns of adjustment (personal, social, emotional) would be appropriate here.	Display safety consciousness Demonstrate self-reliance in working independently Practice cooperation in group activities Use objective approach in problem solving Demonstrate industry, punctuality and self-discipline Maintain good health habits	Acts, discriminates, displays, influences, listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, uses, verifies

MAJOR CATEGORIES IN THE PSYCHOMOTOR DOMAIN
(Simpson, 1965)

SOURCE: Simpson, E. J. The classification of educational objectives: Psychomotor domain. University of Illinois, 1965.

Descriptions of the Major Categories in the Psychomotor Domain	Performance Terms for Essential Competencies	Observable Behavior Verbs For Learner Outcomes
1. Perception. This is an essential first step in performing a motor act. It is the process of becoming aware of objects, qualities, or relations by way of the sense organs. It is the central portion of the situation - interpretation - action chain leading to purposeful motor activity. It is divided into the areas of sensory stimulation, cue selection, and translation of perception to action in performing a motor act.	Sensory Stimulation Sensitive to auditory cues in playing a musical instrument Awareness of difference in texture of various materials Sense the flavors in seasoning food Cue Selection Recognize the operating difficulties with machinery via sound Sense where the needle should be set in machine stitching Translation Relate music to dance form Follow a recipe in preparing food	Use the "ILLUSTRATIVE VERBS FOR STATING SPECIFIC LEARNING OUTCOMES" (especially the Laboratory and manipulative behaviors section) on the following two pages to locate observable behaviors for your psychomotor enabling objectives.
2. Set. This is a preparatory adjustment of readiness for a particular kind of action or experience. Three aspects of set have been identified: mental, physical, and emotional.	Mental Knowledge of steps in setting the table Knowledge of tools appropriate to perform an operation Physical Achieve bodily stance preparatory to bowling Position hands preparatory to typing Emotional Desire to operate a drill press with skill Disposition to perform sanding to best of ability	
3. Guided Response. This is an overt behavioral act of a learner under the guidance of the instructor. It is an early step in the development of a skill and emphasis is upon the abilities which are components of the more complex skill. There are two major subcategories: 1) imitation and 2) trial and error.	Imitation Perform dance step as demonstrated Demonstrate flexibility exercises as modeled by the teacher Trial and Error Discover the most efficient method of finishing hardwoods Ascertain the sequence of cleaning a room through trial of several patterns	
4. Mechanism. Learned response has become habitual. At this level, the learner has achieved a certain confidence and degree of skill in the performance of an act. The response may be more complex than at the preceding level; it may involve some patterning of response in carrying out the task. That is, abilities are combined in action of a skill nature.	Perform a hand-hemming operation Mix ingredients for a butter cake Construct an ellipse using the four-center method Prepare a lathe for a face plate turning Pollinate an oat flower	
5. Complex Overt Response. At this level, the learner can perform a motor act that is considered complex because of the movement pattern required. A high degree of skill is evident. The task can be carried out smoothly and efficiently with minimum time and energy. There are two subcategories: 1) resolution of uncertainty and 2) automatic performance.	Resolution of Uncertainty Operate a milling machine Set-up and operate a production band saw Automatic Performance Perform basic steps of popular dance steps Tailor a suit Perform on the violin	

ILLUSTRATE VERBS FOR STATING SPECIFIC LEARNING OUTCOMES*

"Creative Behaviors"

Alter	Paraphrase	Reconstruct	Rephrase	Rewrite
Ask	Predict	Regroup	Restate	Simplify
Change	Question	Rename	Restructure	Synthesize
Design	Rearrange	Reorganize	Retell	Systematize
Generalize	Recombine	Reorder	Revise	Vary
Modify				

Logical, Judgmental Behaviors

Analyze	Conclude	Deduce	Formulate	Plan
Appraise	Contrast	Defend	Generate	Structure
Combine	Criticize	Evaluate	Induce	Substitute
Compare	Decide	Explain	Infer	Substitute

General Discriminative Behaviors

Choose	Detect	Identify	Match	Place
Collect	Differentiate	Indicate	Omit	Point
Define	Discriminate	Isolate	Order	Select
Describe	Distinguish	List	Pick	Separate

Social Behaviors

Accept	Communicate	Discuss	Invite	Praise
Agree	Compliment	Excuse	Join	React
Aid	Contribute	Forgive	Laugh	Smile
Allow	Cooperate	Greet	Meet	Talk
Answer	Dance	Help	Participate	Thank
Argue	Disagree	Interact	Permit	Volunteer

Laboratory and Manipulative Behaviors

Apply	Demonstrate	Keep	Perform	Specify
Calibrate	Dissect	Lengthen	Prepare	Square
Calculate	Draw	Limit	Remove	Straighten
Check	Feed	Manipulate	Repair	Time
Conduct	Grow	Measure	Replace	Transfer
Connect	Implement	Move	Report	Weight
Construct	Increase	Operate	Reset	
Convert	Insert	Plant	Set	
Decrease			Sketch	
			Solve	

Arts Behaviors

Assemble	Dot	Illustrate	Press	Stamp
Blend	Draw	Melt	Roll	Stick
Brush	Drill	Mix	Rub	Stir
Build	Fold	Mold	Sand	Trace
Carve	Form	Nail	Saw	Trim
Color	Frame	Paint	Sculpt	Varnish
Construct	Hammer	Paste	Shake	Wipe
Cut	Handle	Pat	Sketch	Wrap
Dab	Heat	Pour	Smooth	

"Study" Behaviors

Arrange	Compile	Itemize	Mark	Record
Categorize	Copy	Label	Name	Reproduce
Chart	Diagram	Locate	Note	Search
Cite	Find	Look	Organize	Sort
Circle	Follow	Map	Quote	Underline

General Appearance, Health, and Safety

Button	Dress	Fasten	Taste	Unzip
Clean	Drink	Fill	Tie	Wait
Clear	Eat	Go	Unbutton	Wash
Close	Eliminate	Lace	Uncover	Wear
Cover	Empty	Stop	Untie	Zip

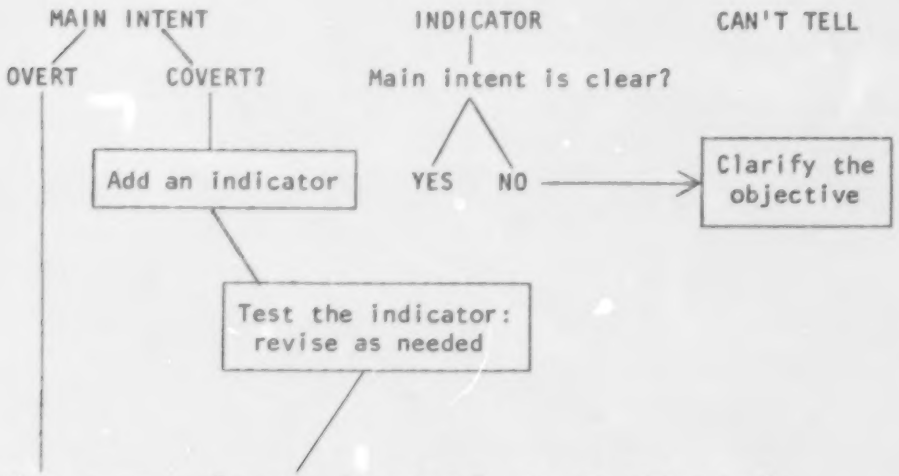
Miscellaneous

Aim	Erase	Lead	Relate	Stake
Attempt	Expand	Lend	Repeat	Start
Attend	Extend	Let	Return	Stock
Begin	Feel	Light	Ride	Store
Buy	Fit	Mend	Save	Suggest
Come	Fix	Miss	Scratch	Supply
Complete	Clip	Offer	Send	Support
Consider	Get	Open	Serve	Switch
Correct	Give	Pack	Sew	Take
Crease	Grind	Pay	Share	Tear
Crush	Guide	Peel	Sharpen	Touch
Designate	Hand	Pin	Shoot	Try
Determine	Hang	Position	Shorten	Twist
Develop	Hold	Present	Shovel	Type
Discover	Hook	Produce	Shut	Use
Distribute	Hunt	Propose	Signify	Vote
Do	Include	Provide	Slip	Watch
Drop	Inform	Put	Slide	Weave
End	Lay	Raise	Spread	Work

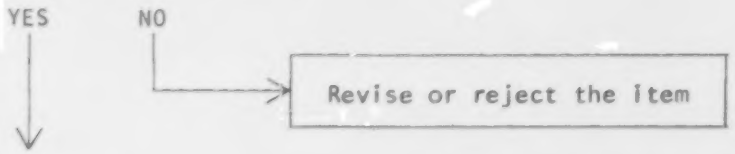
*TAKEN FROM STATING BEHAVIORAL OBJECTIVES FOR CLASSROOM INSTRUCTION by Norman E. Gronlund

OBJECTIVE/ITEM CHECKLIST*

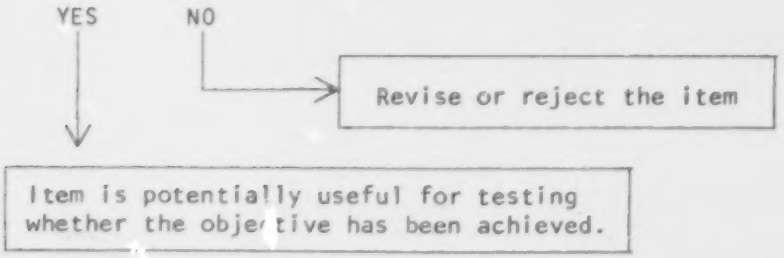
1. What performance is stated in the objective?
2. What is the performance?



3. What overt performance is asked for by the objective?
4. What performance is asked for by the item?
5. Do the performances match?



6. Do objective and item conditions match?



*Courtesy of Mager Associates, Inc.

WEST VIRGINIA DEPARTMENT OF EDUCATION

BUREAU OF LEARNING SYSTEMS

DIVISION OF INSTRUCTIONAL LEARNING SYSTEMS

PERFORMANCE RECORD

Name: _____ Curriculum Area: _____

DIRECTIONS: List under the headings below the tasks which you will accomplish in this workshop. This learning contract will act as a reference point to measure your progress during and at the end of the workshop. The numbers in parenthesis refer to the workshop's enabling objectives.

	Achieved	Date	Partially Achieved	Not Achieved
1. Share (1, 5) my personal beliefs about learning systems				
2. Assist (3, 4) others in achieving the objectives of the workshop				
3. Discriminate the domains (6) and levels (7) of learning				
4. Discriminate (8) the elements of terminal and enabling objectives				
5. Write (9) original terminal and enabling objectives in the three domains of learning				
6. Identify (11) and explain (12, 13) the elements of the learning system				
7. Write (2, 18, 19, 20) an original example of a learning system				
8. Analyze and evaluate (14) my learning system				
9. Identify (15) and explain (16) the basic principles of flowcharting educational tasks				
10. Flowchart (17) your learning system activities				

*Comments may be continued on back of page.

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WORKSHOP EVALUATION

Tell it like it is!

Check one or more of the days you feel you learned the most during this workshop.

Monday _____
Tuesday _____
Wednesday _____
Thursday _____
Friday _____

Circle the face that best agrees with your feelings.

Complete any of the sentences which you feel are appropriate.

I wish that we _____

_____

I really liked the way _____

_____

It seems to me that _____

_____

What this workshop needs is _____

_____

APPENDIX B:

DATA COLLECTION INSTRUMENTS

WEST VIRGINIA DEPARTMENT OF EDUCATION

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PREASSESSMENT CHECKLIST

Name _____ Date Completed _____

Part I. DIRECTIONS - In order to determine your entry level in regard to the objectives for this workshop, answer yes or no to the following questions. Use the comments column to provide additional information to your responses.

	Yes	No	Comments
1. Are you familiar with systematic approaches to instruction?	____	____	
2. Can you design a learning sequence based on a systems approach?	____	____	
3. Can you design flowcharts describing learning tasks?	____	____	
4. Can you discriminate the three domains of behavior?	____	____	
5. Can you discriminate the levels of the domains?	____	____	
6. Can you identify the elements of a terminal objective?	____	____	
7. Can you identify the elements of an enabling objective?	____	____	
8. Can you discriminate between terminal and enabling objectives?	____	____	
9. Can you write terminal/enabling objectives that reflect the elements identified in Nos. 6 and 7?	____	____	

Preassessment Checklist - 2

	Yes	No	Comments
10. Can you match learning objectives with modes of instruction?	_____	_____	

Part II. In the space below, define the term model.

Part III. In the space below, flowchart an education task (i.e., the processes, decisions, etc.).

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PARTICIPANT DATA QUESTIONNAIRE (PDQ)

1. Check your sex: _____ Male

   _____ Female

2. Check your age category:

_____ 25 or under	_____ 46-50
_____ 26-30	_____ 51-55
_____ 31-35	_____ 56-60
_____ 36-40	_____ 61-65
_____ 41-45	_____ 65 and up

3. Check the highest formal educational level you have attained:

   _____ High School or Less
   _____ Post Secondary, Technical, or Business School
   _____ Bachelors Degree
   _____ Bachelors Degree Plus
   _____ Masters Degree
   _____ Masters Degree Plus
   _____ Doctors Degree

4. Indicate the number of years, to the nearest one-half year, of years of classroom teaching experience, at any level, you have completed. (One year is taken to be one school year, i.e., 9-10 months.)

   _____ years

5. Indicate the number of years of educational supervisory or administrative experience you have completed. The number of years, which may be either 9 or 12 months each, for this response are meant to be exclusive of the years in the question number four response.

   _____ years

6. Check the educational level you most identify or deal with:

   _____ Elementary
   _____ Secondary
   _____ Elementary and secondary combined

LAST 4 S.S. NOS. _____

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SELF-RATINGS OF WORKSHOP TOPICS (SOWT)

DIRECTIONS: Give yourself a point value for each of the curriculum concepts listed in the right-hand column in accordance with the numerical scale below.

1. The term has no meaning to me.
2. I have heard or seen the term, but the concept is unclear.
3. I have a general idea of the meaning.
4. I have some specific knowledge and/or experience with this concept.
5. I have studied the topic in depth and/or have had much contact through observation or practice.

____ 1. Sensitivity Training
____ 2. Domains of Behavior
____ 3. Differentiated Staffing
____ 4. Flowcharting
____ 5. Computer-Assisted Instruction
____ 6. Learning Packages
____ 7. Micro-Teaching
____ 8. Educational Park
____ 9. Instructional Objectives
____10. Paraprofessional
____11. Interaction Analysis
____12. Compensatory Education
____13. A Learning System Model
____14. National Assessment
____15. Performance Contracts
____16. Simulation Games
____17. Voucher Plans
____18. Mini-Courses
____19. Criterion-Referenced Measurement
____20. Humanistic Education
____21. Individualized Instruction
____22. Accountability
____23. Competency-Based Education

LAST 4 S.S. NOS. _____

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VALUES INVENTORY PAGE (VIP)

DIRECTIONS: Below you will find a set of six values with a short phrase explaining the value named. Beneath each value is a scale ranging from 1 (the lowest point value) to 10 (the highest point value). You are to determine how much each stated value means to you along the continuum represented by the 1-10 point value scale. Indicate by a check mark, etc., a point along the scale as drawn that corresponds to the importance you attach to the value.

Last, rank the values in order of their importance to you. Indicate your rankings by placing the number (one being highest) of each value's rank in the box in front of the value name.

☐ A. EQUALITY, brotherhood, equal opportunity for all

1 2 3 4 5 6 7 8 9 10

|———————————————————————————————|

☐ B. TRUE FRIENDSHIP, close companionship

1 2 3 4 5 6 7 8 9 10

|———————————————————————————————|

☐ C. WISDOM, a mature understanding of life

1 2 3 4 5 6 7 8 9 10

|———————————————————————————————|

☐ D. IMAGINATIVE, daring, creative

1 2 3 4 5 6 7 8 9 10

|———————————————————————————————|

☐ E. LOGICAL, consistent, rational

1 2 3 4 5 6 7 8 9 10

|———————————————————————————————|

☐ F. INNER HARMONY, freedom from inner conflict

1 2 3 4 5 6 7 8 9 10

|———————————————————————————————|

LAST 4 S.S. NOS. _____

WEST VIRGINIA DEPARTMENT OF EDUCATION

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POST WORKSHOP EVALUATION (POWE)

During the past week you have participated in a mastery learning, competency-based workshop focusing on developing learning systems. In order to obtain feedback about your perception and attitudes toward the workshop, please react to the following items.

PART I WORKSHOP ENABLING OBJECTIVES - Indicate the extent of your agreement with the following items by circling SA (Strongly Agree), A (Agree), D (Disagree), or SD (Strongly Disagree):

The workshop enabling objectives:

1) helped me to recognize specifically what performances I did during the workshop	SA	A	D	SD
2) helped me to recognize specifically how well I completed the expected performances	SA	A	D	SD
3) prescribed standards which helped me to self-evaluate my performances	SA	A	D	SD
4) were structured so that I could self-pace my learning throughout the week	SA	A	D	SD
5) were relevant in terms of providing me with a model to follow in my objective writing efforts	SA	A	D	SD

PART II WORKSHOP LEARNING ACTIVITIES -

The workshop learning activities:

6) were helpful to meaningful learning	SA	A	D	SD
7) were varied enough to suit me	SA	A	D	SD
8) afforded me options to master the workshop objectives	SA	A	D	SD
9) helped me to learn in individual conferences with the workshop co-leaders	SA	A	D	SD
10) helped me to learn from my peers in small groups or in one to one sessions	SA	A	D	SD

Post Workshop Evaluation - 2

PART III WORKSHOP CO-LEADERS - Rate the consultants on the following items by circling one of the numbers on the scale from 5 (Highly Effective) to 1 (Ineffective)

11) presentation of materials and information in full group settings	5	4	3	2	1
12) instruction in small group settings	5	4	3	2	1
13) instruction in individual conferences	5	4	3	2	1
14) overall helpfulness and attitude in aiding you to solve problems	5	4	3	2	1
15) organization of learning materials and learning activities	5	4	3	2	1

PART IV EVALUATION AND FEEDBACK TECHNIQUES - Rate the following techniques in terms of helping you to master the workshop objectives by circling one of the numbers on the scale from 5 (Highly Important) to 1 (Unimportant)

16) pretest	5	4	3	2	1
17) the performance record	5	4	3	2	1
18) sample learning system evaluation checksheet	5	4	3	2	1
19) oral feedback	5	4	3	2	1
20) written feedback	5	4	3	2	1

PART V OPEN REACTIONS - In the space below or on the back of this sheet, please comment on any item of the workshop. In addition, please add any personal reactions which you feel are important in terms of assessing the value of this workshop to you.

LAST 4 S.S. NOS. _____

WEST VIRGINIA DEPARTMENT OF EDUCATION

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A SCALE FOR MEASURING ATTITUDES TOWARD ANY PRACTICE*

DIRECTIONS: Following is a list of statements about selected practices. Place a plus sign (+) before each statement with which you agree with reference to the practices listed to the left of the statements. Please be sure to insert the plus signs in the proper "box" under the three practices listed. Hint: It would be easiest to start with one practice and go down that column only before starting to respond to the other practices.

COMPETENCY-BASED EDUCATION	THE LEARNING SYSTEM MODEL	THIS STAFF DEVELOPMENT WORKSHOP	
			1. Has an irrestible attraction for me.
			2. I like this practice too well to give it up.
			3. Serves a good purpose.
			4. Develops cooperation.
			5. Should be appreciated by more people.
			6. Has advantages.
			7. There is no reason for stopping this practice.
			8. Is all right in a few cases.
			9. My likes and dislikes for this practice are balanced.
			10. I dislike this practice, but I do not object to others liking it.
			11. Isn't so bad, but it is very boring.
			12. Has several undesirable features.
			13. Should not be tolerated when there are so many better ones.
			14. Life would be happier without this practice.
			15. It is a waste of time and money.

A Scale For Measuring Attitudes Toward Any Practice - 2

COMPETENCY-BASED EDUCATION	THE LEARNING SYSTEM MODEL	THIS STAFF DEVELOPMENT WORKSHOP	
			16. Accomplishes nothing worthwhile either for the individual or society.
			17. Is the worst thing I know.

*Copyright, The Purdue Research Foundation, 1960